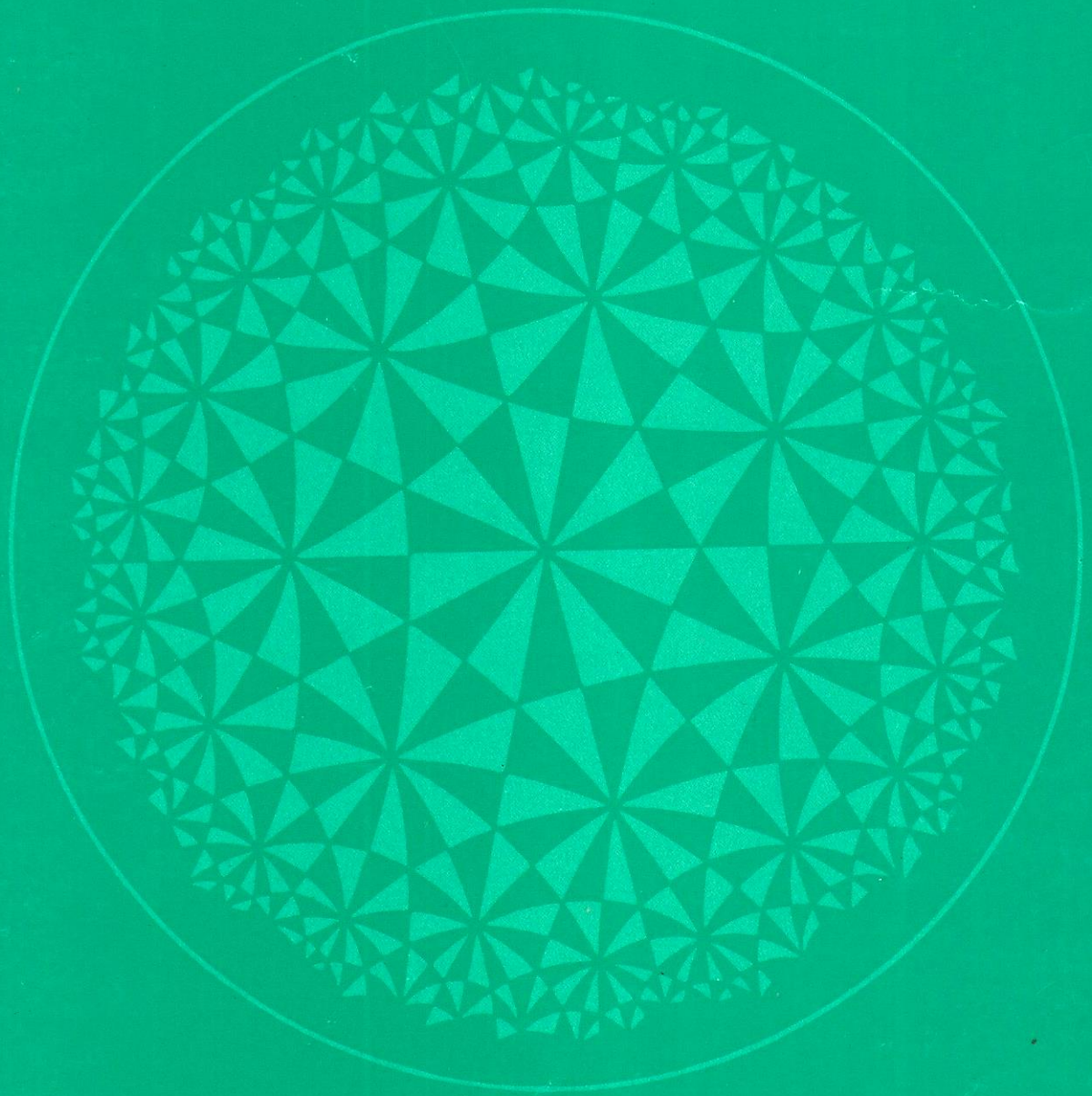
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UNIT 1
CURVE-SKETCHING



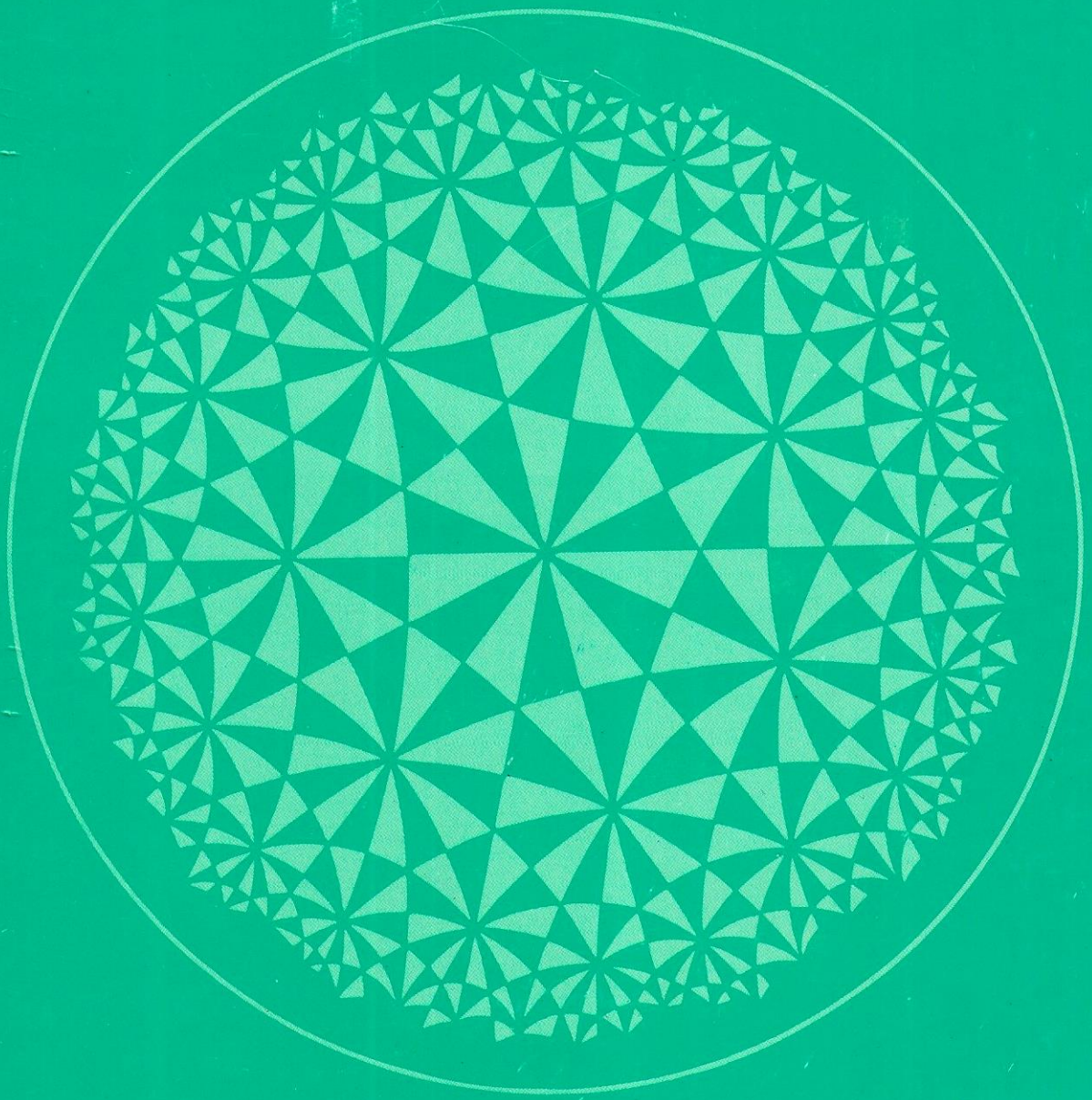
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UNIT 2
SYMMETRY



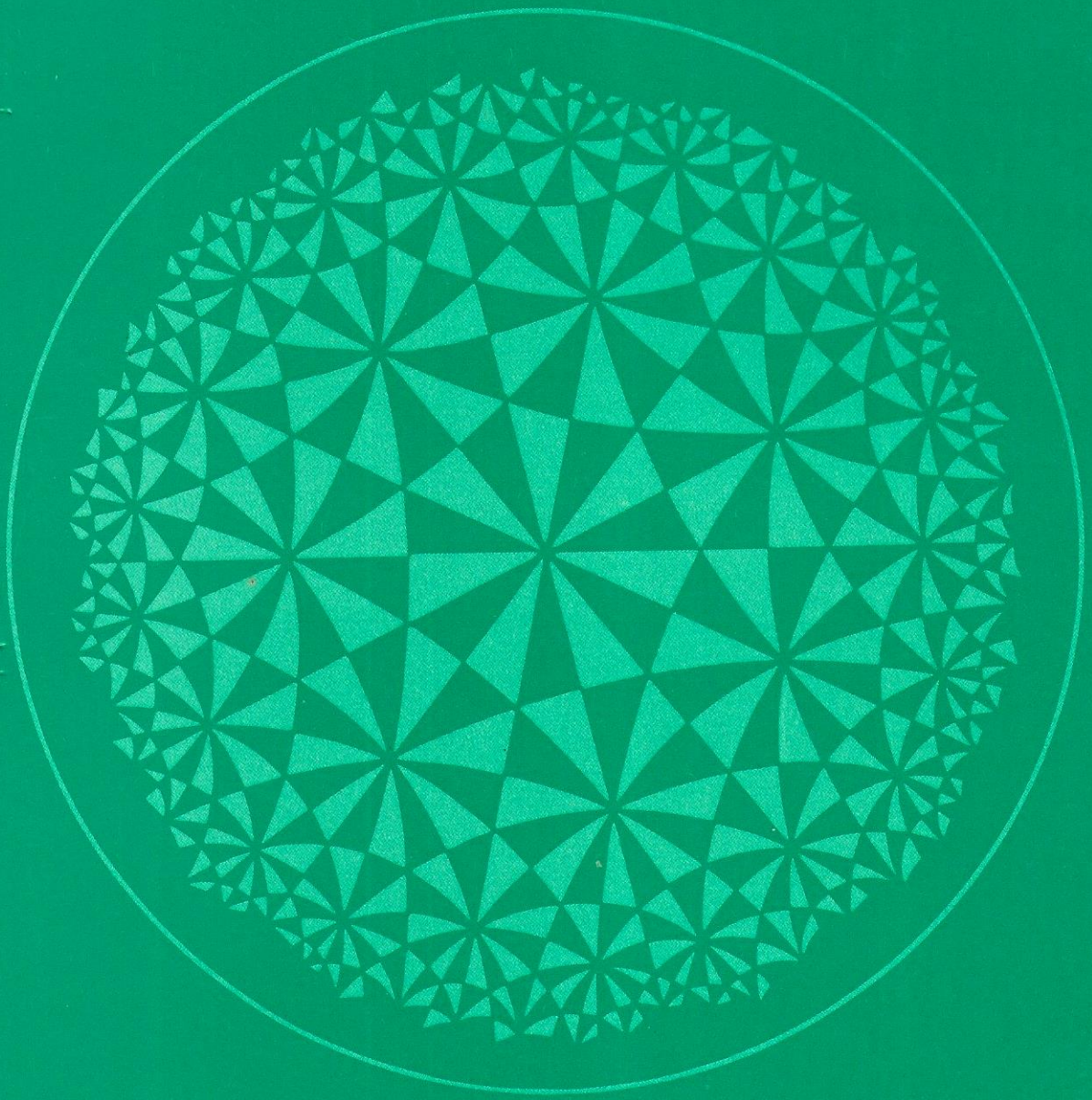
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M203 IB3



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UNIT 3
PLANE GEOMETRY



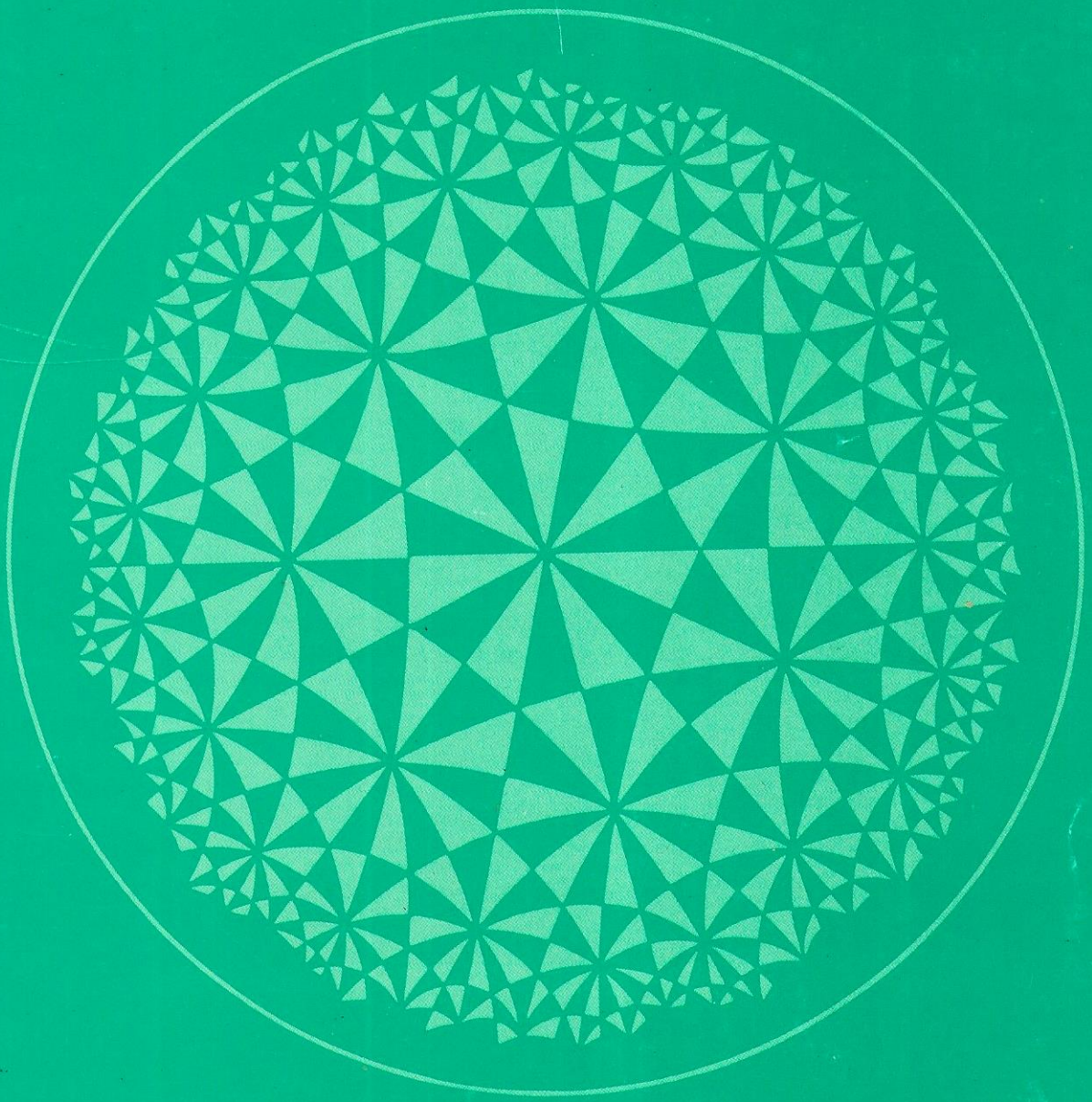
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UNIT 4
GROUPS AND SUBGROUPS



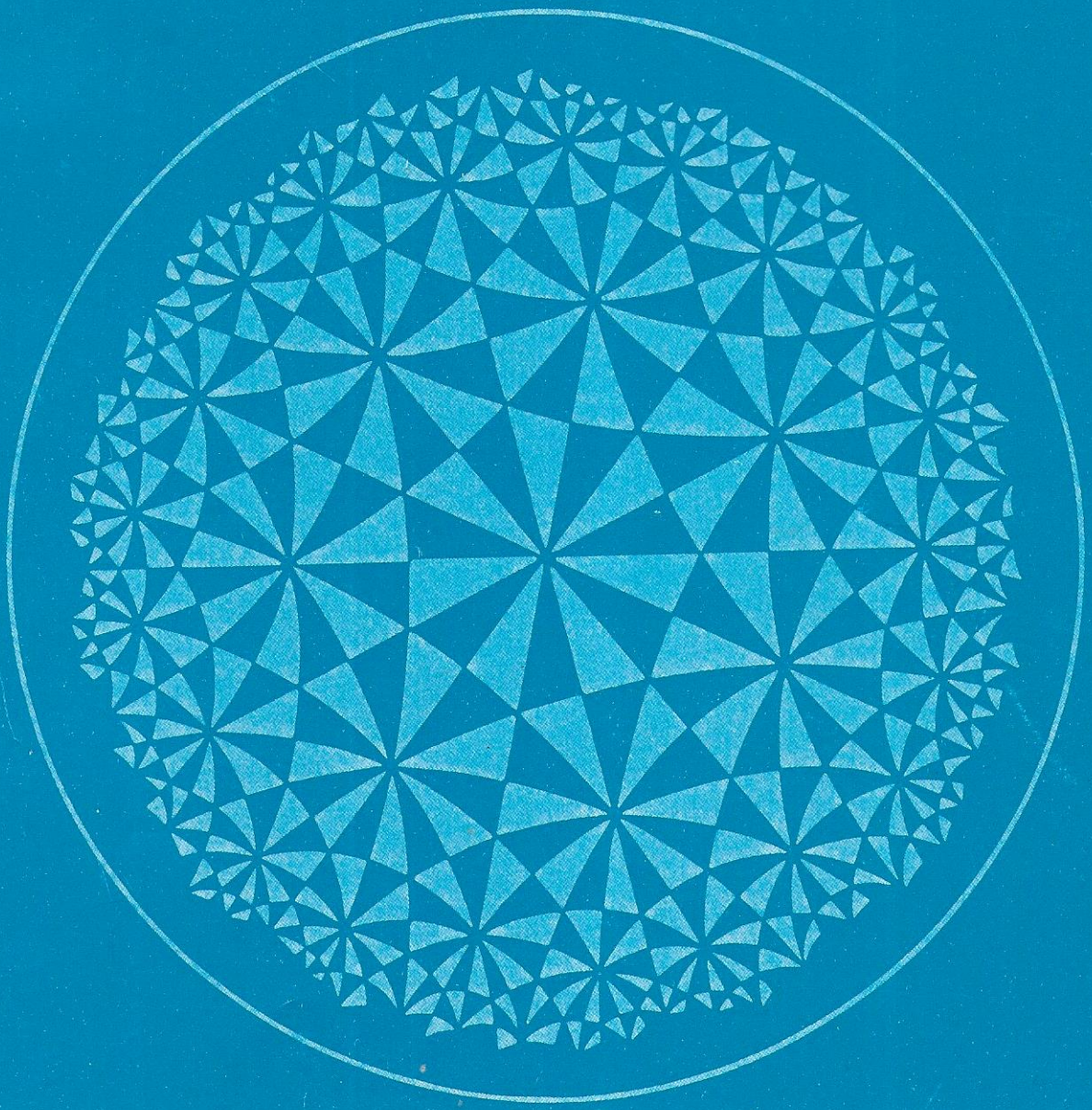
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UNIT 1
LINEAR INDEPENDENCE AND BASES



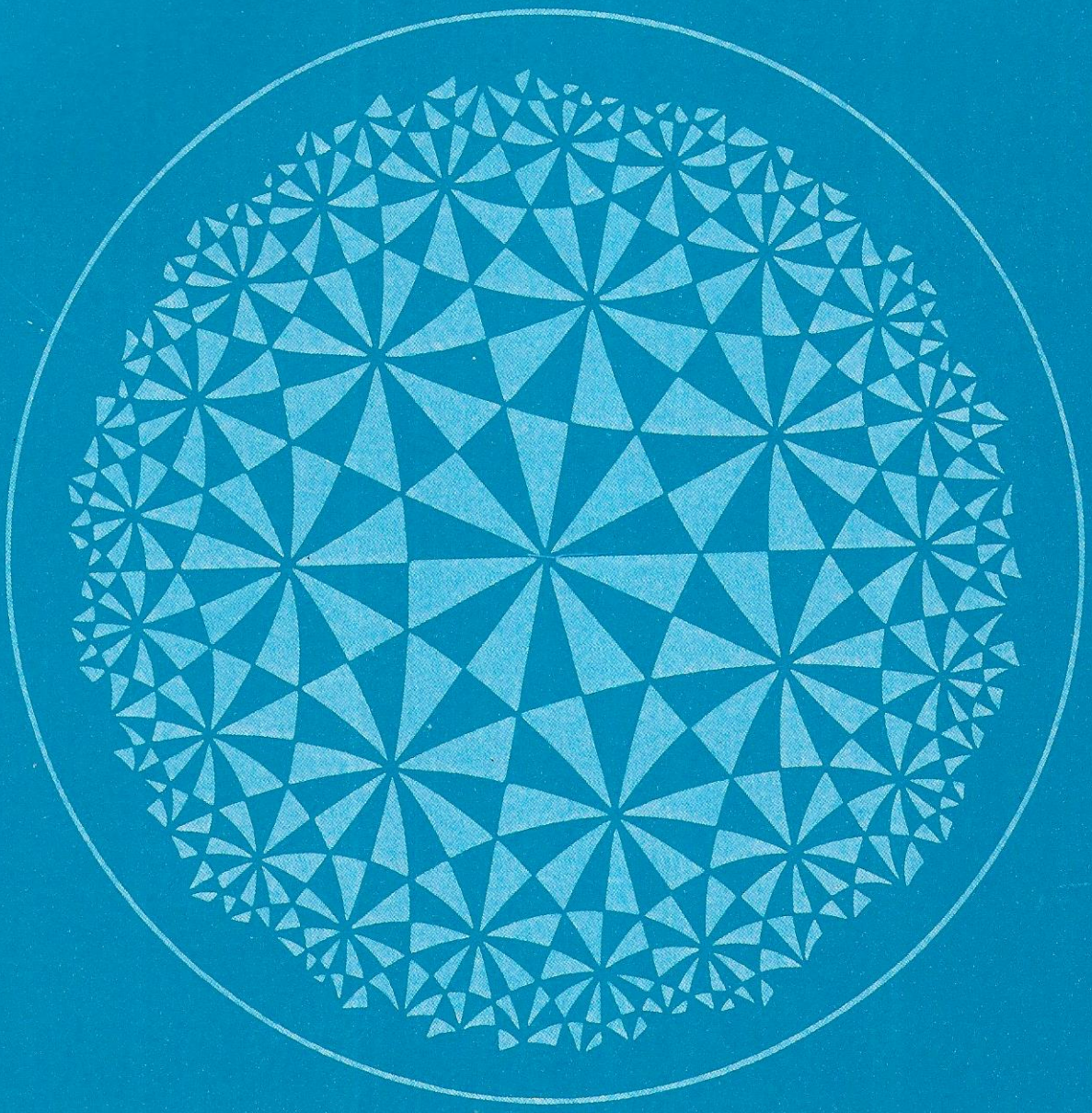
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M203 LA2



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UNIT 2
MATRICES



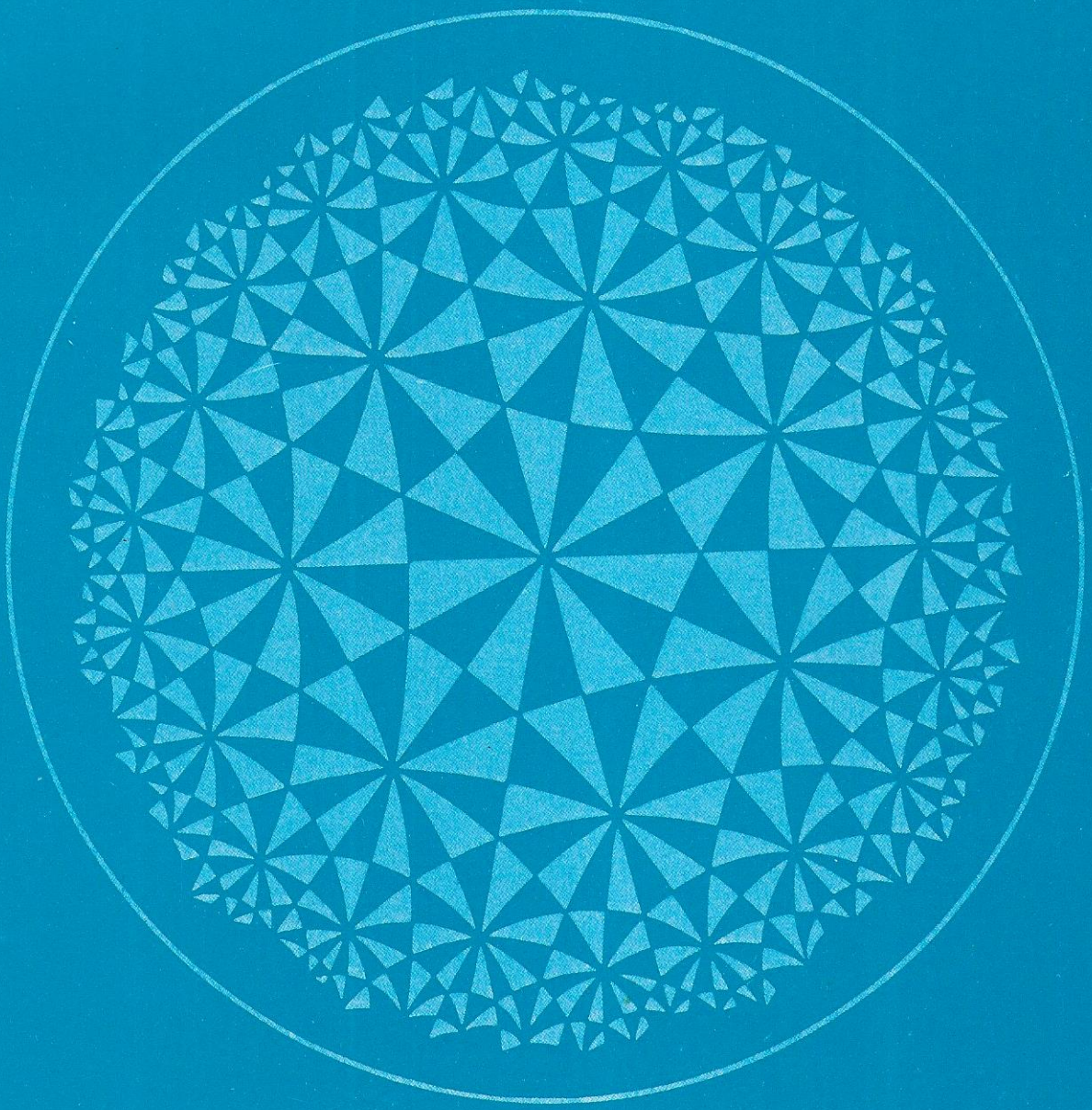
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M203 LA3



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UNIT 3
LINEAR EQUATIONS



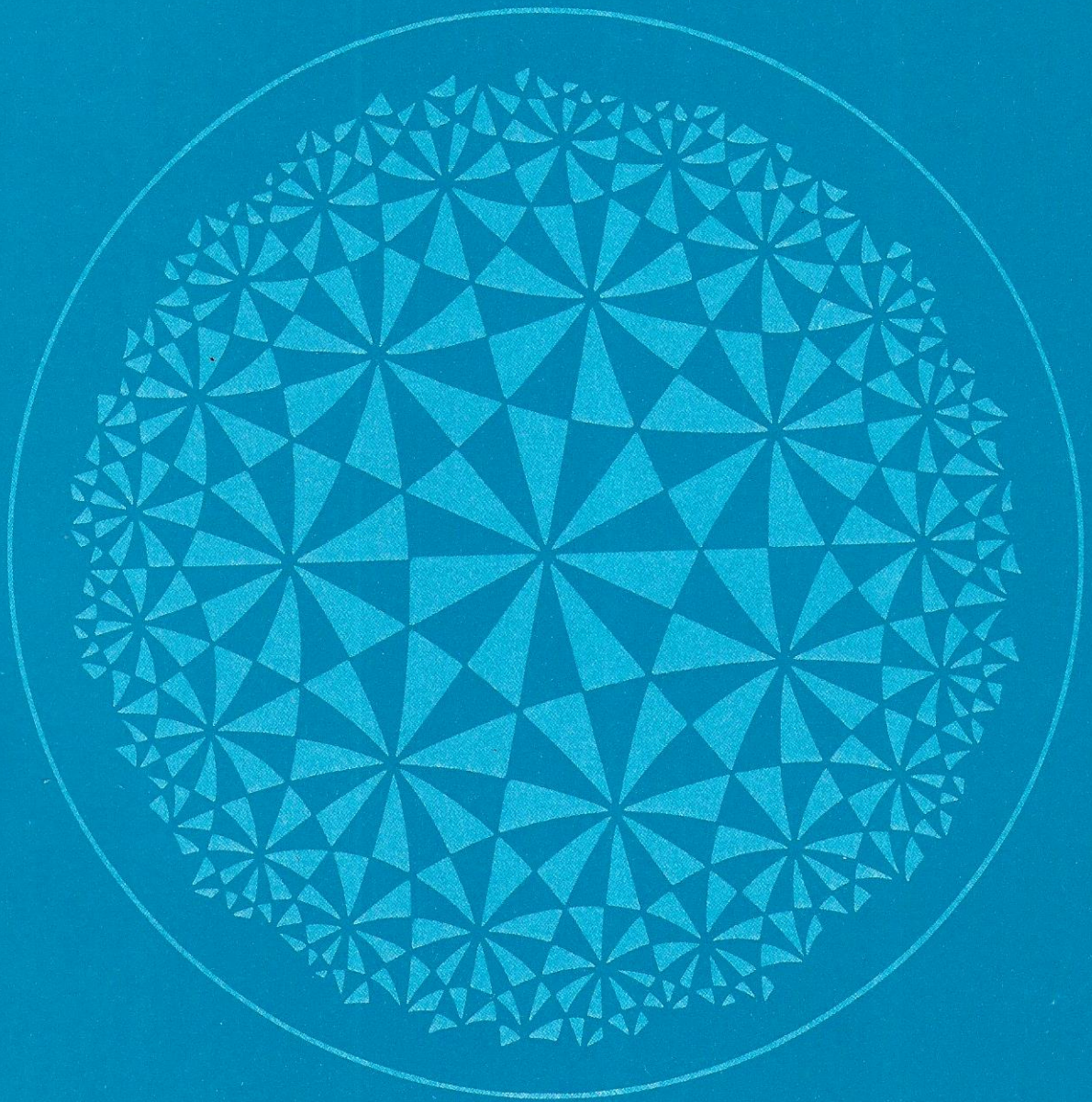
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M203 LA4



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UNIT 4
EIGENVECTORS



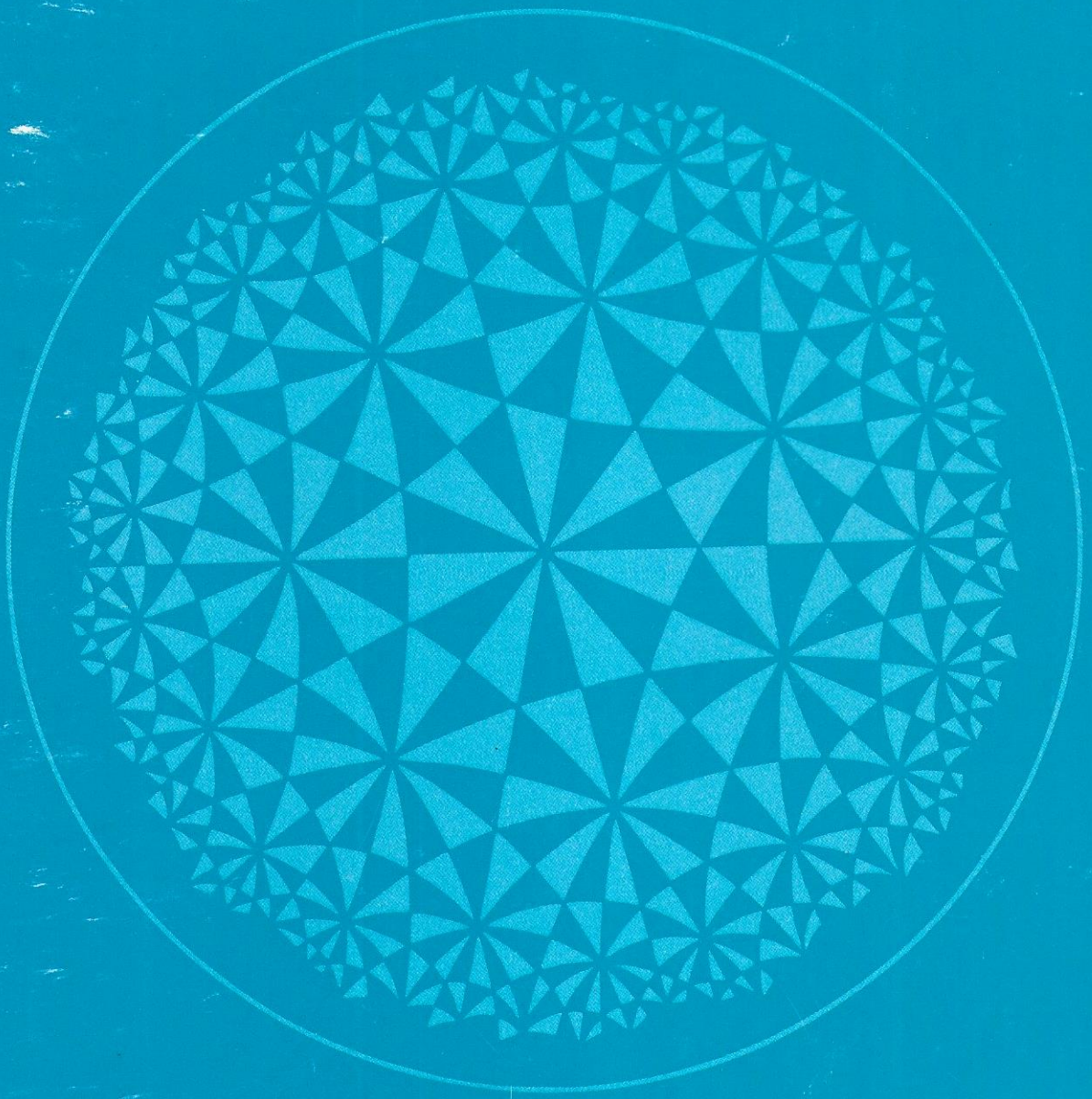
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M203 LA5



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UNIT 5
VECTOR SPACES



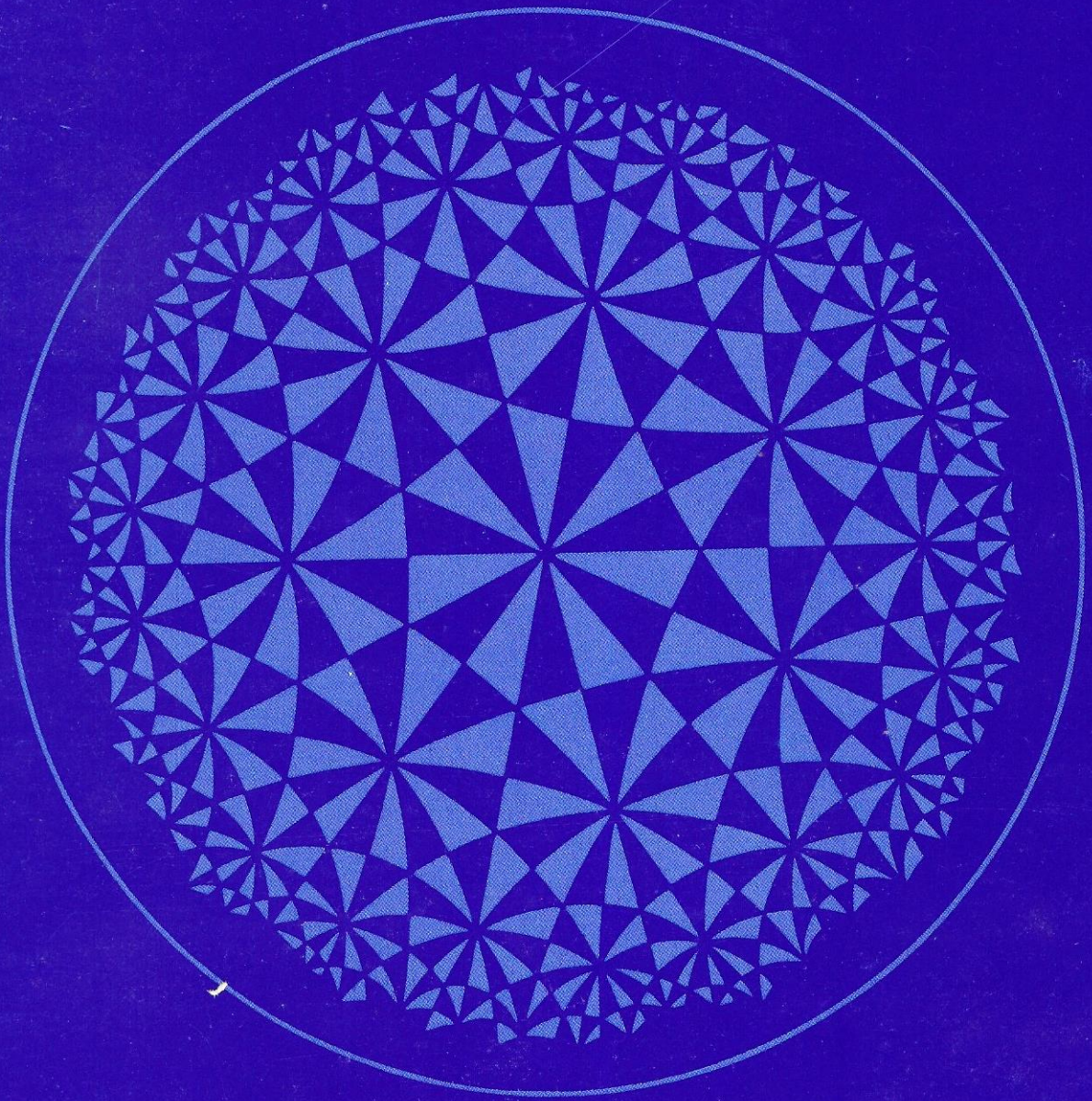
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M203 AA1



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UNIT 1
NUMBERS



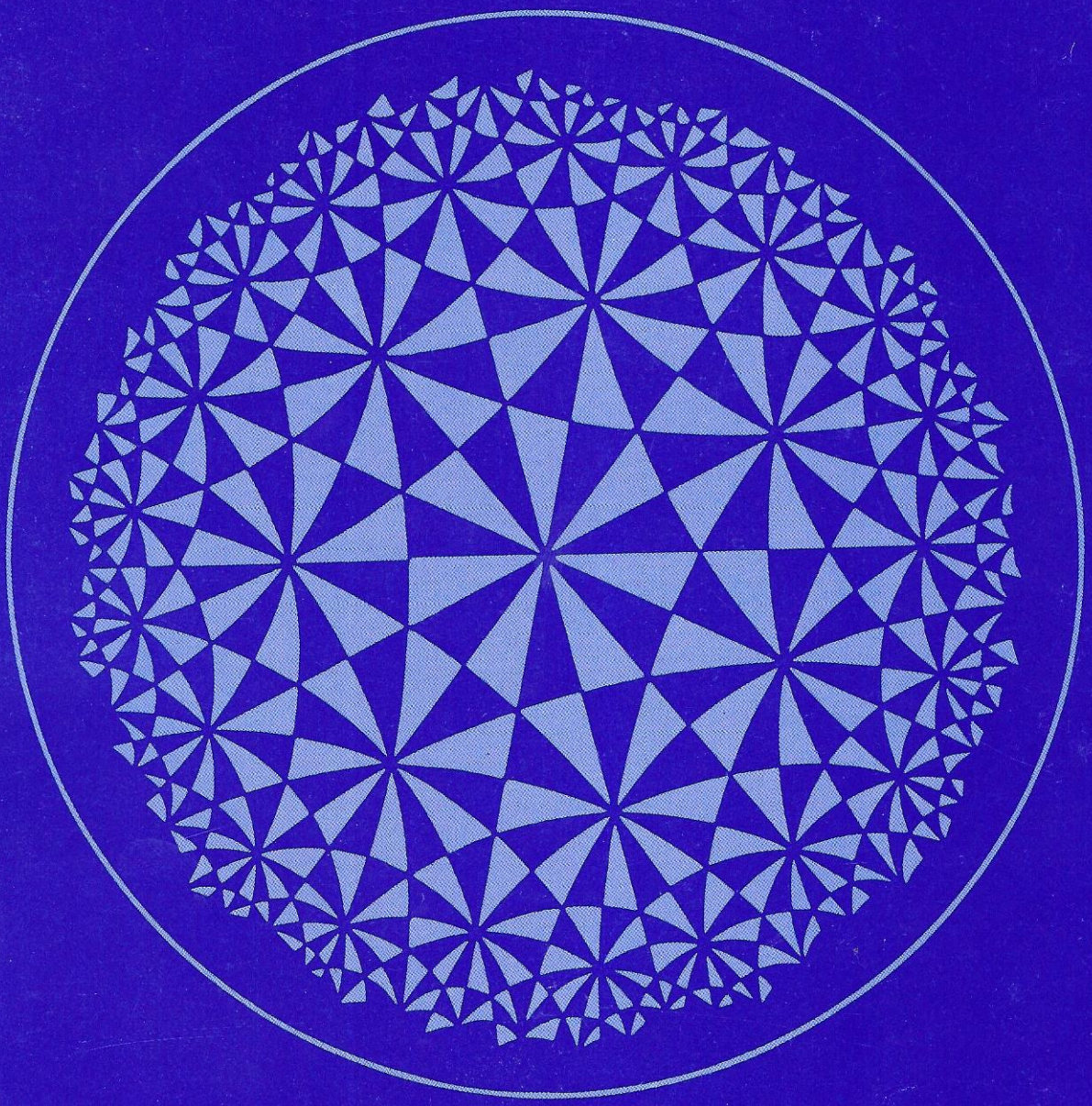
ANALYSIS BLOCK A

M203 AA2



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UNIT 2
SEQUENCES



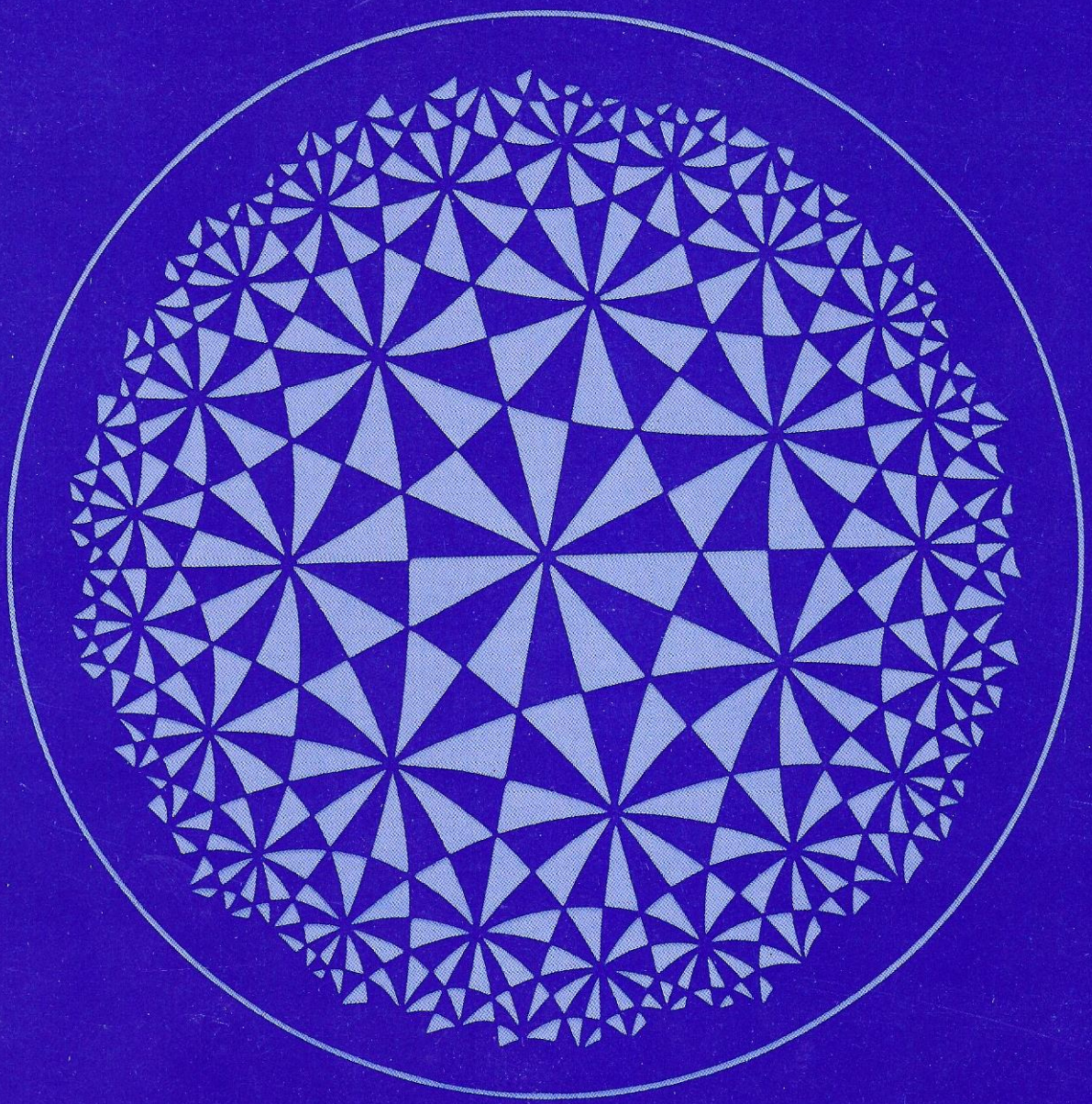
ANALYSIS BLOCK A

M203 AA3



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UNIT 3
SERIES



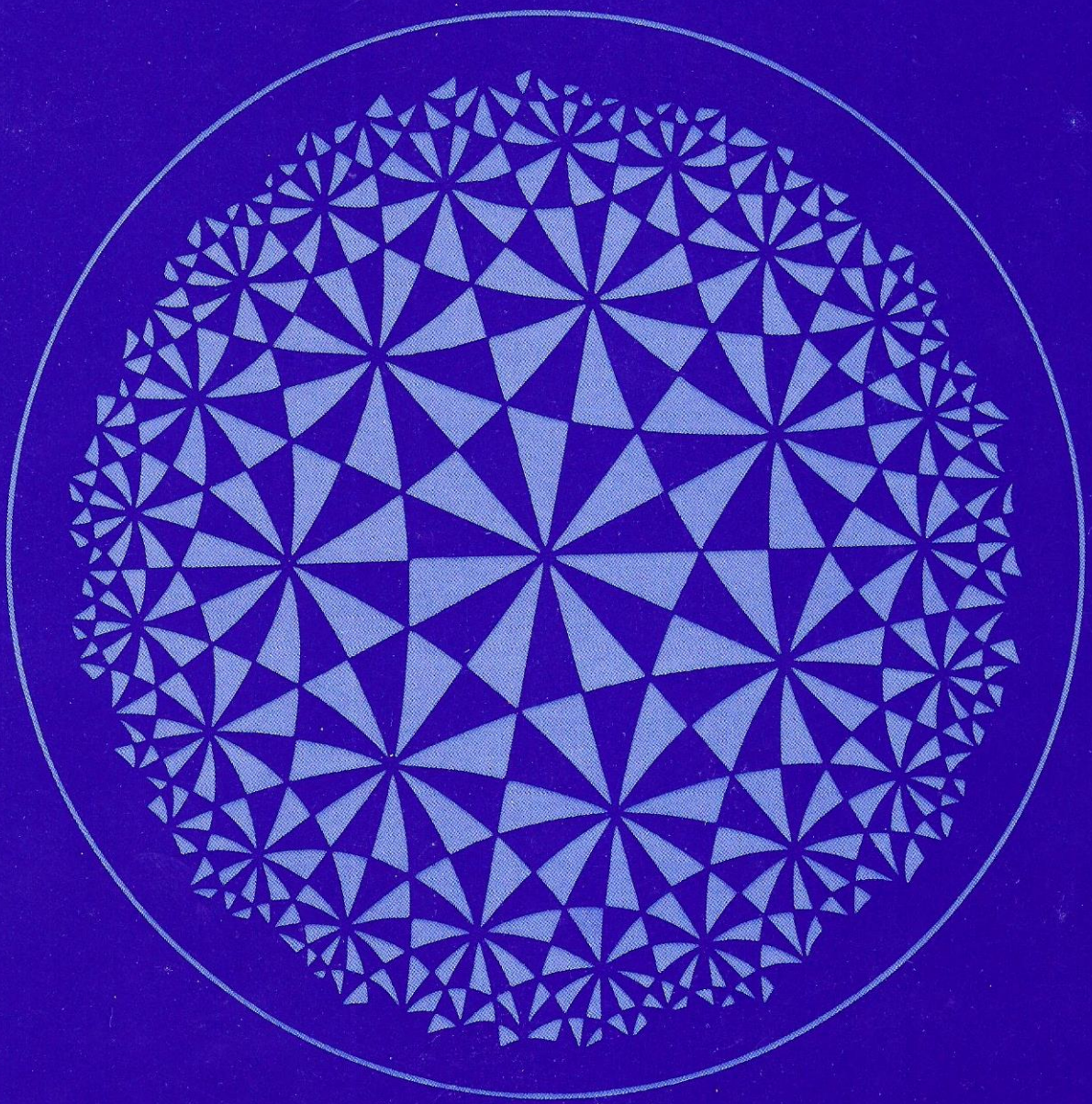
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M203 AA4



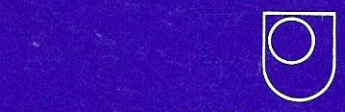
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UNIT 4
CONTINUITY



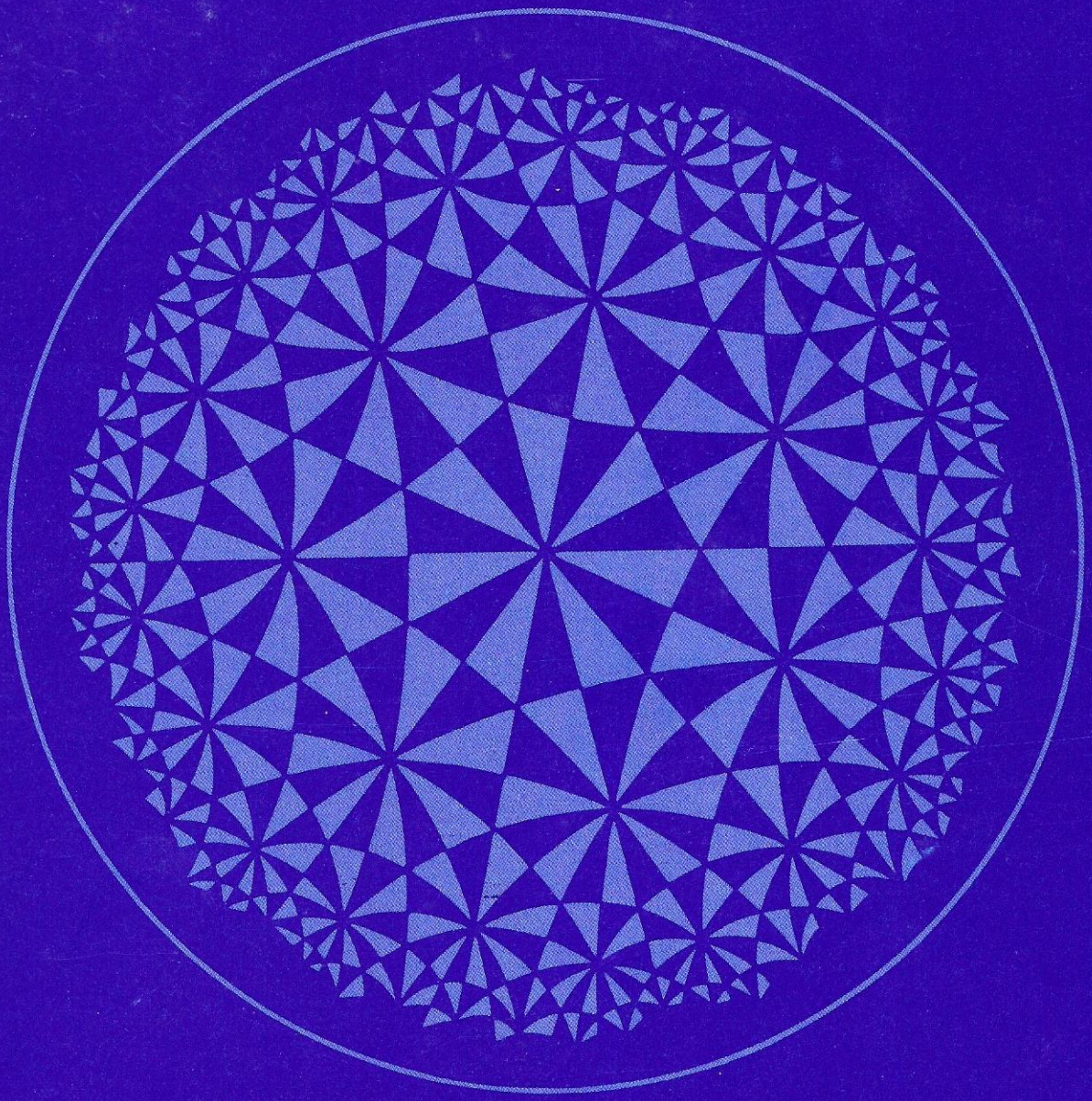
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M203 AA5



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UNIT 5
LIMITS



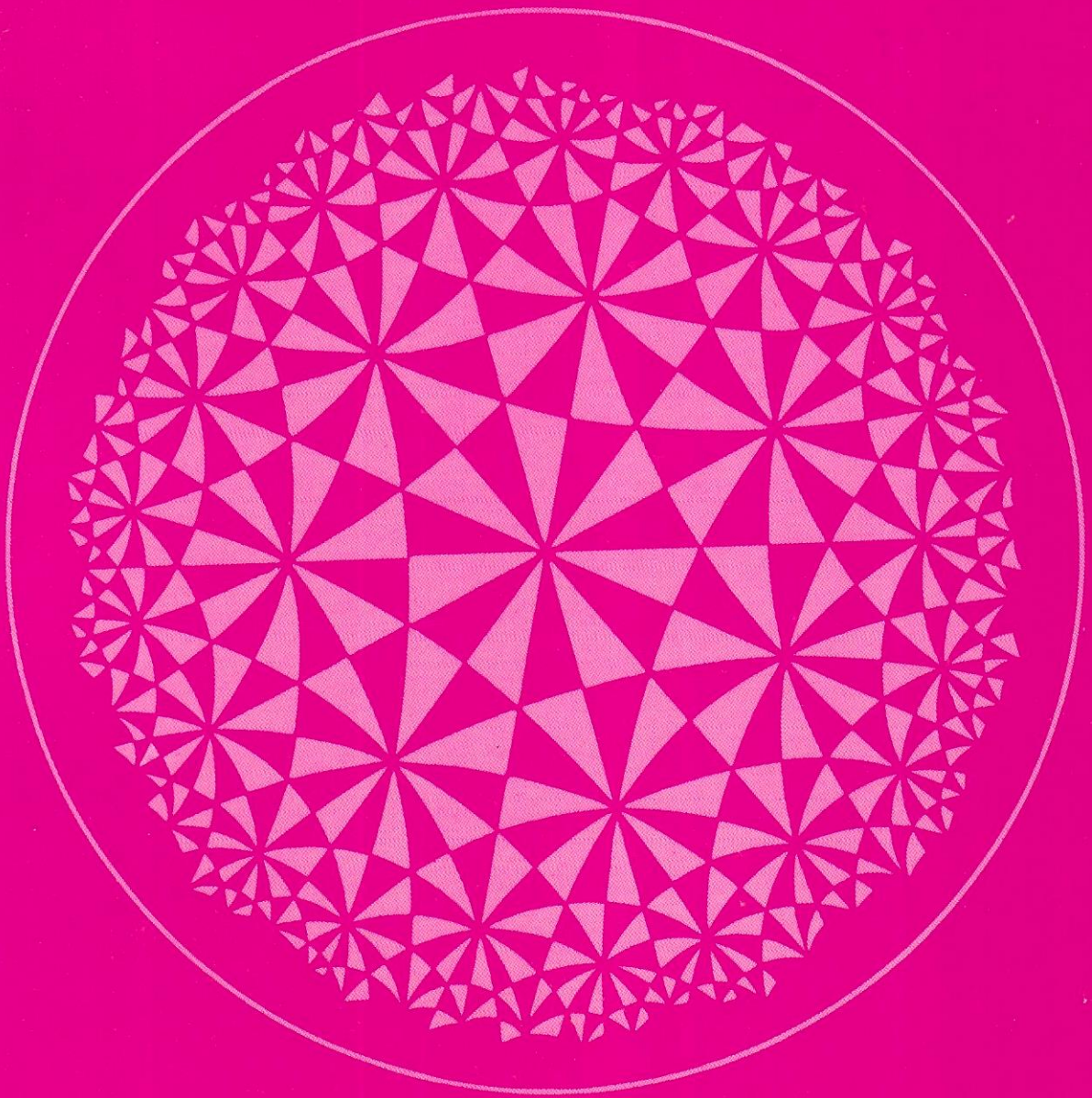
ANALYSIS BLOCK A

M203 GT1



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UNIT 1
PERMUTATIONS



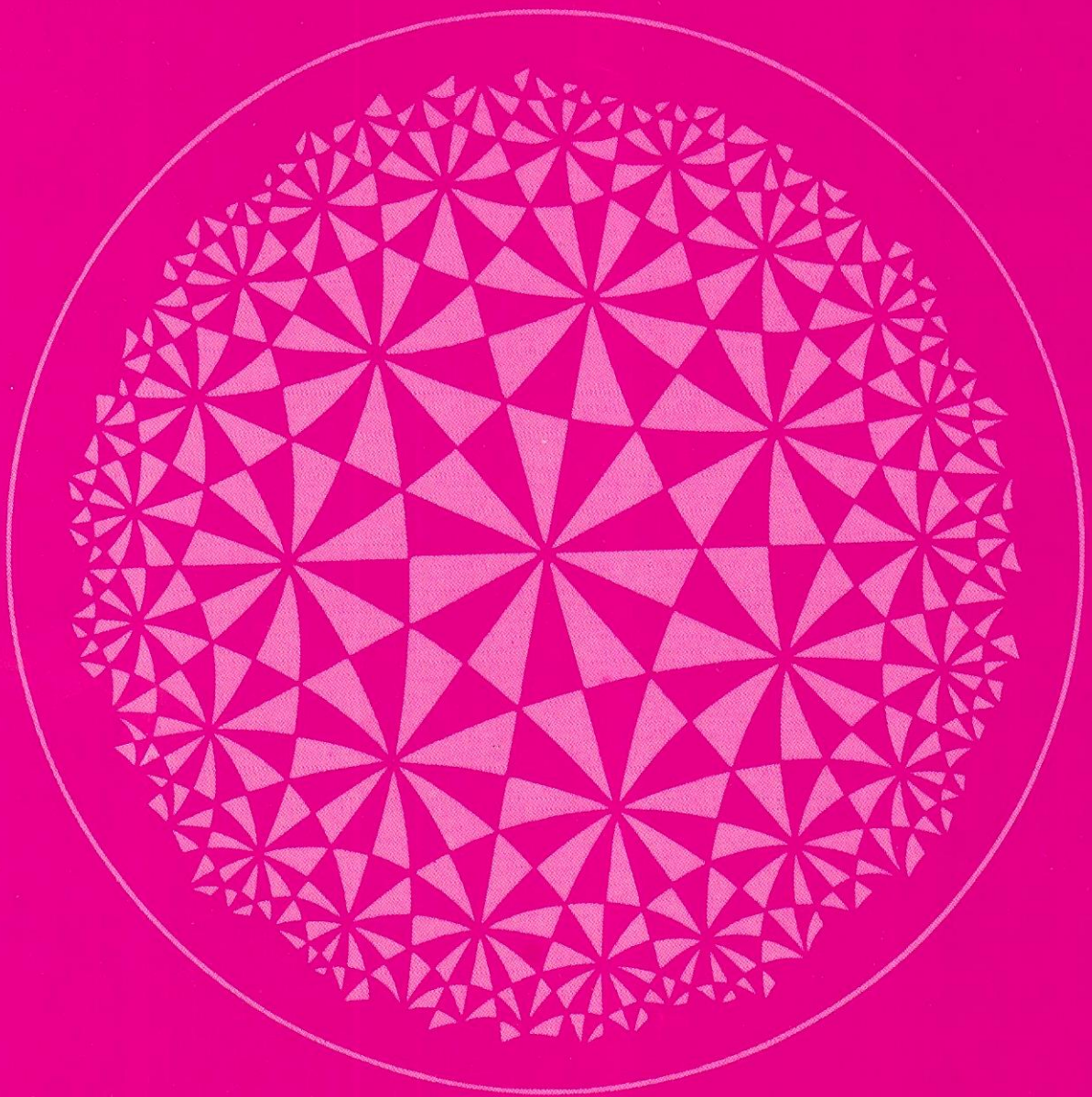
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M203 GT2



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UNIT 2
COSETS AND LAGRANGE'S THEOREM



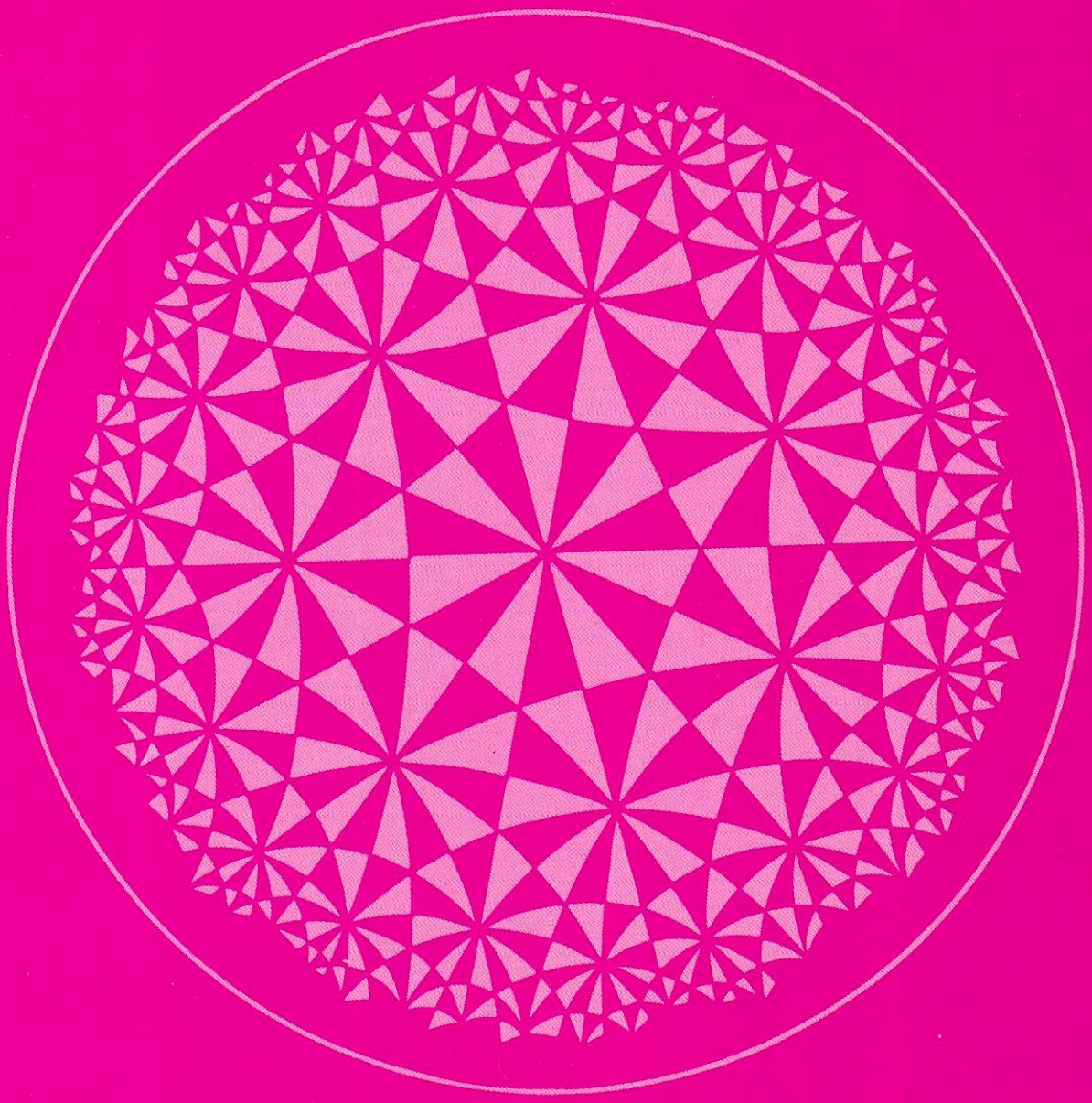
GROUP THEORY BLOCK

M203 GT3



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UNIT 3
CONJUGACY



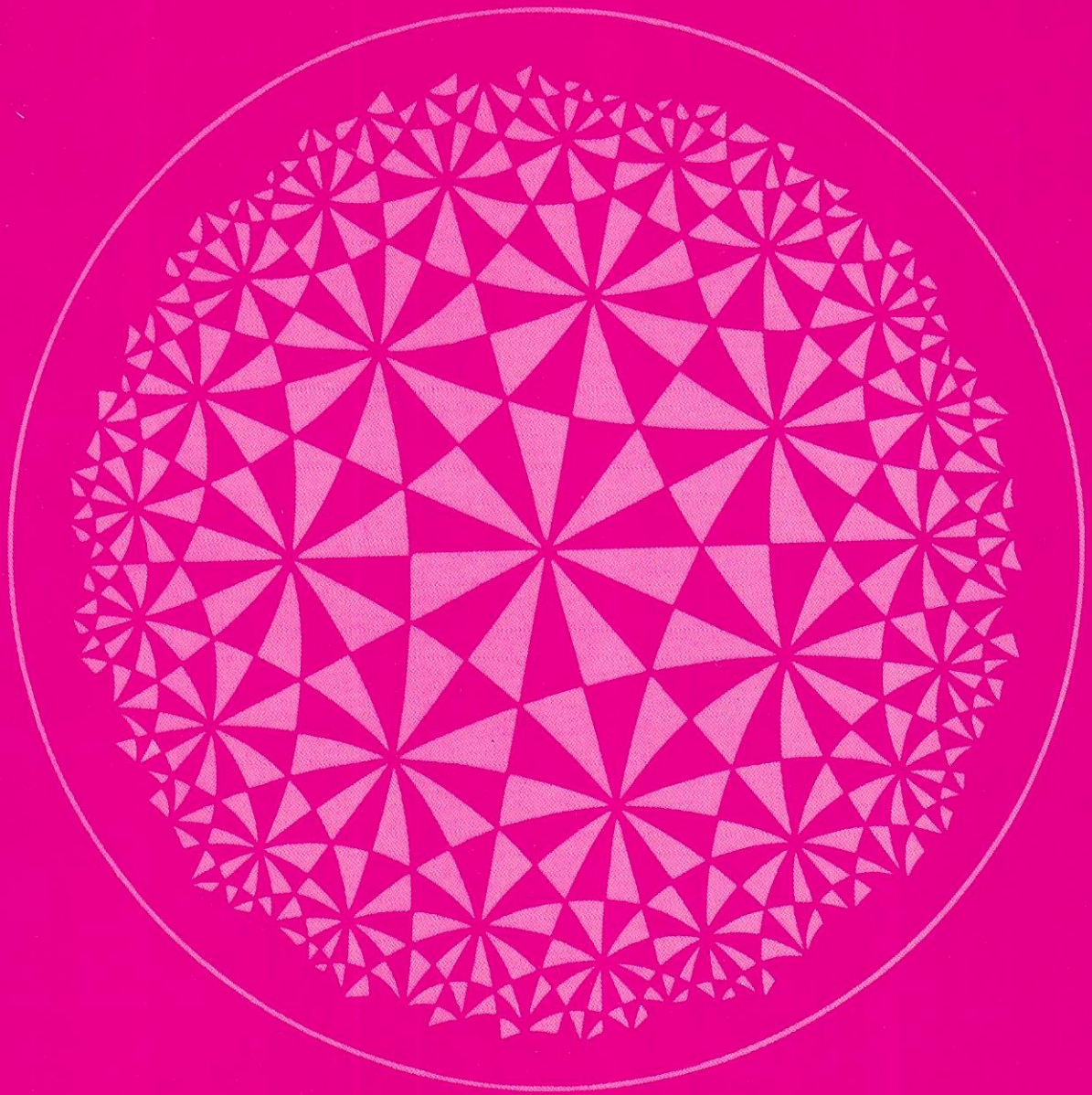
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M203 GT4



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UNIT 4
ISOMORPHISMS AND HOMOMORPHISMS



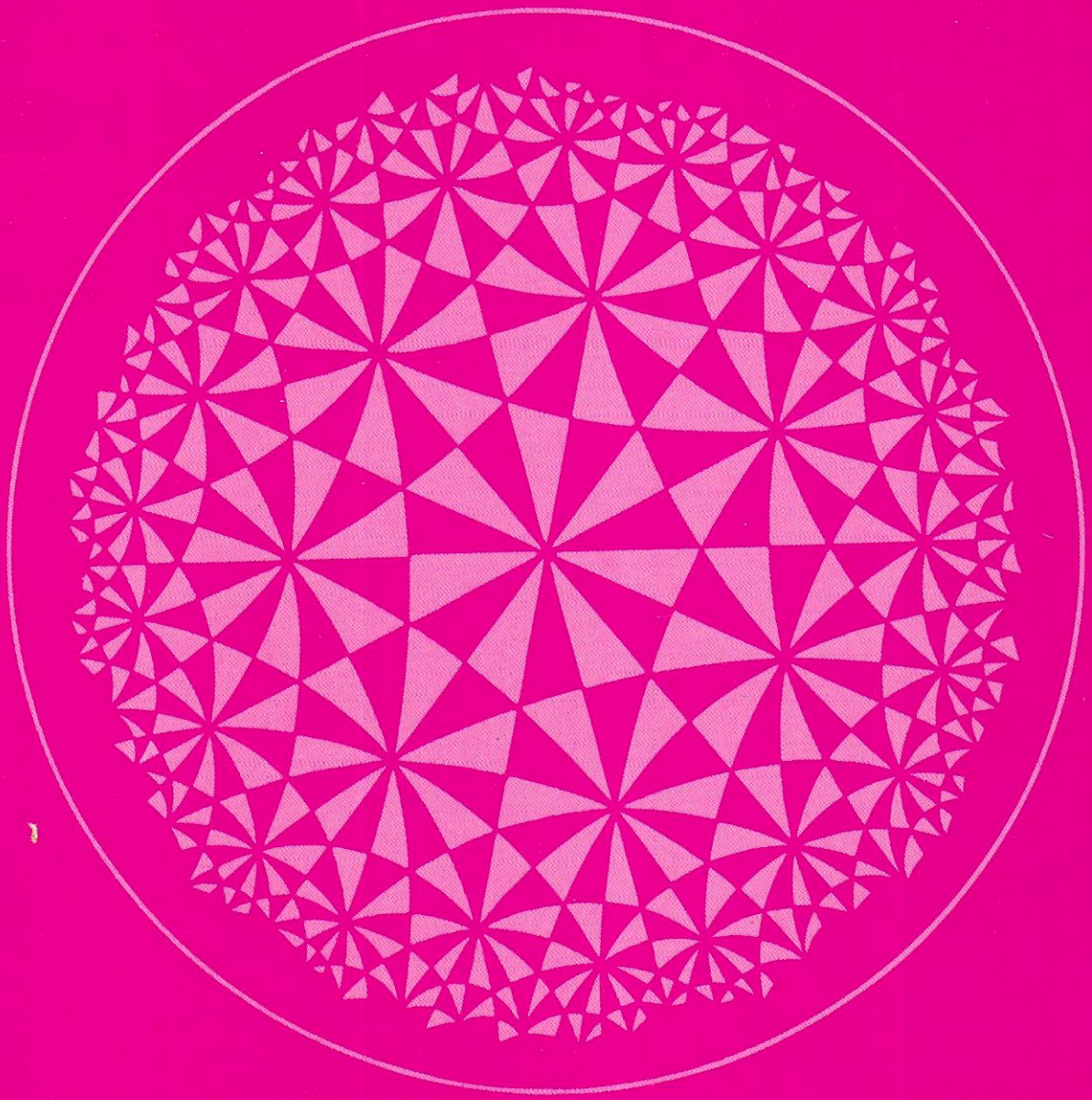
GROUP THEORY BLOCK

M203 GT5



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UNIT 5
GROUP ACTIONS



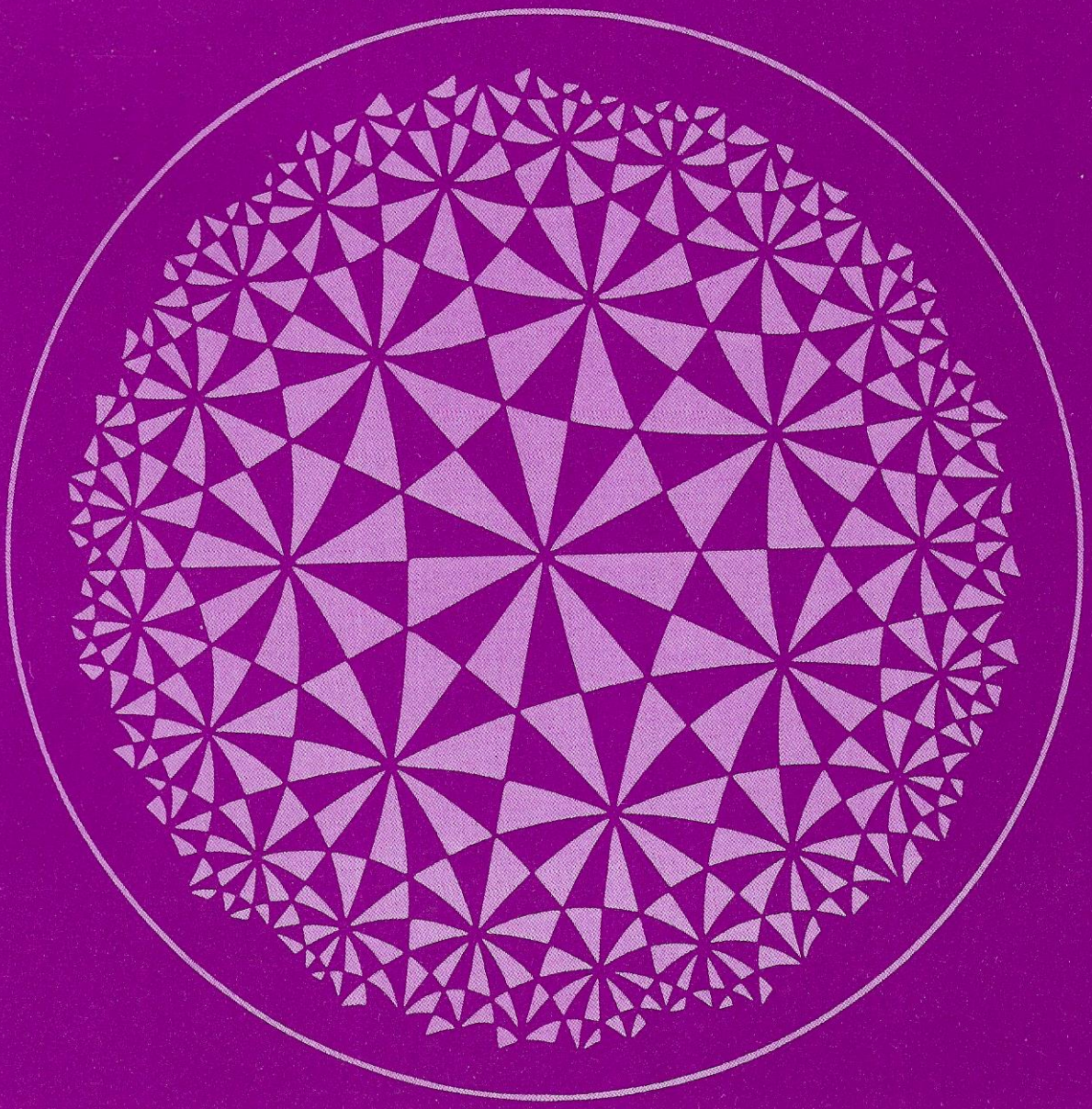
GROUP THEORY BLOCK

M203 G1



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UNIT 1
CONICS, QUADRICS AND QUADRATIC FORMS



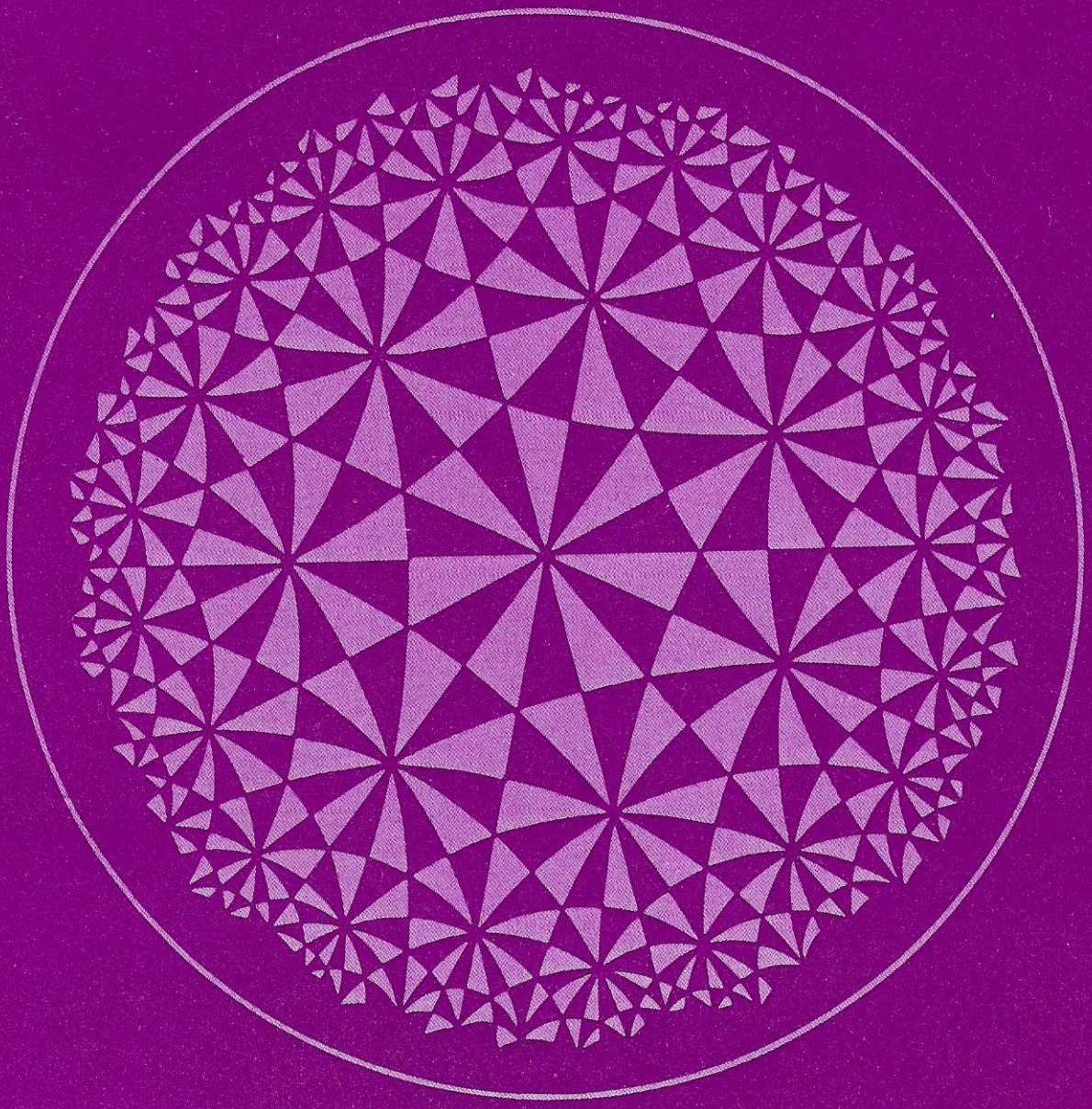
GEOMETRY BLOCK

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UNIT 2
PROJECTIVE GEOMETRY



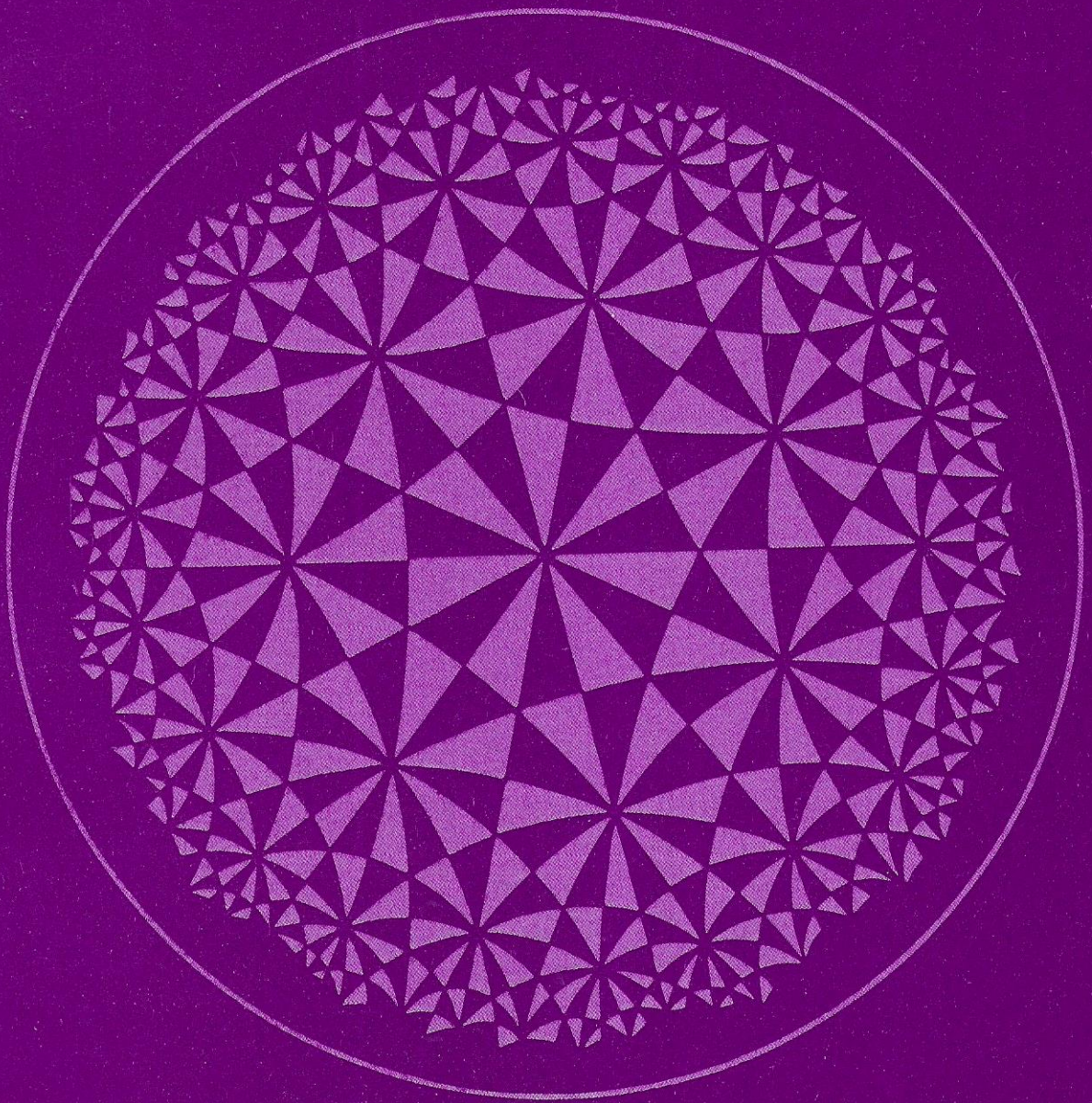
GEOMETRY BLOCK

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UNIT 3
NON-EUCLIDEAN GEOMETRY



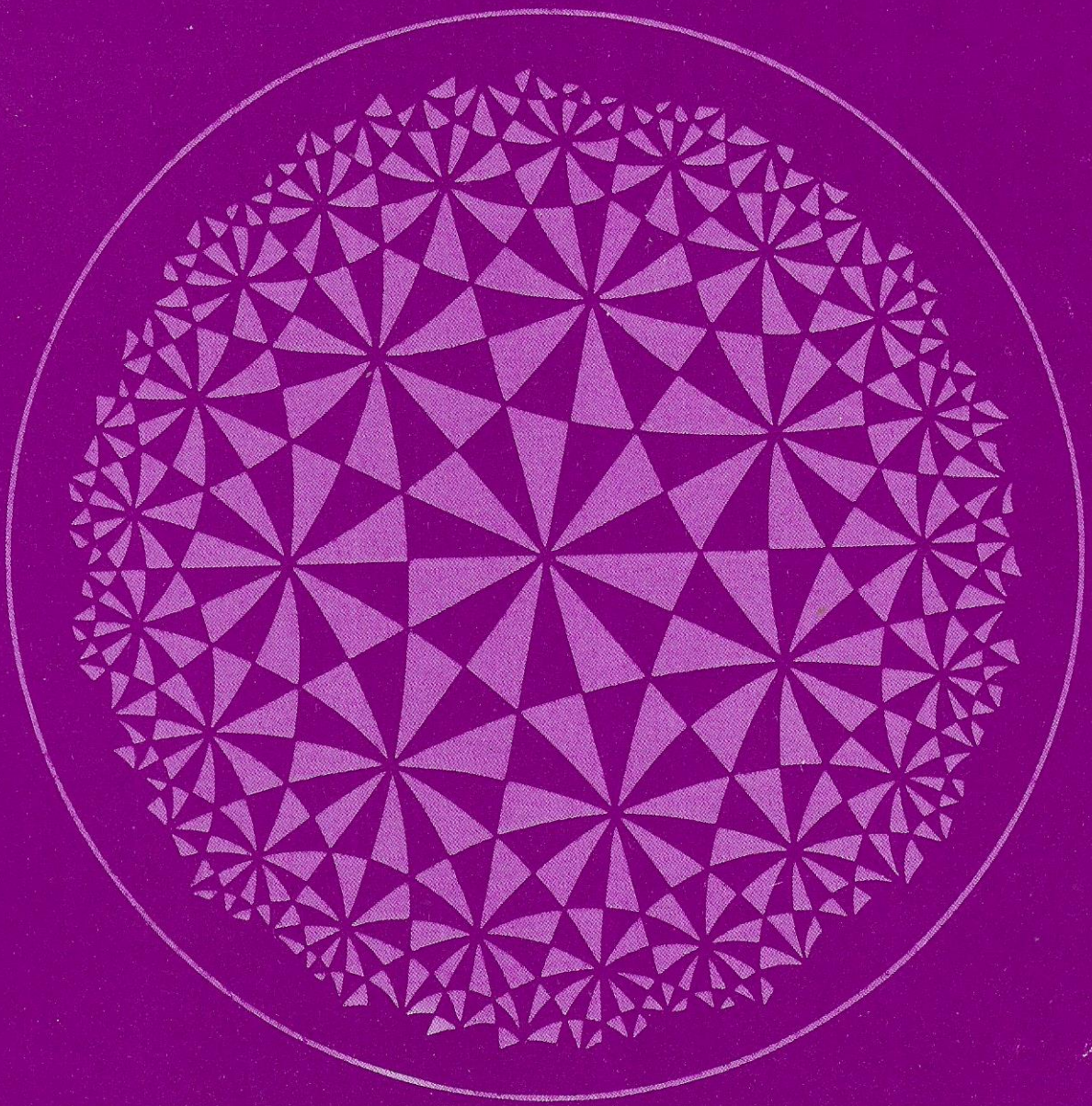
GEOMETRY BLOCK

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UNIT 4
THE KLEINIAN VIEW



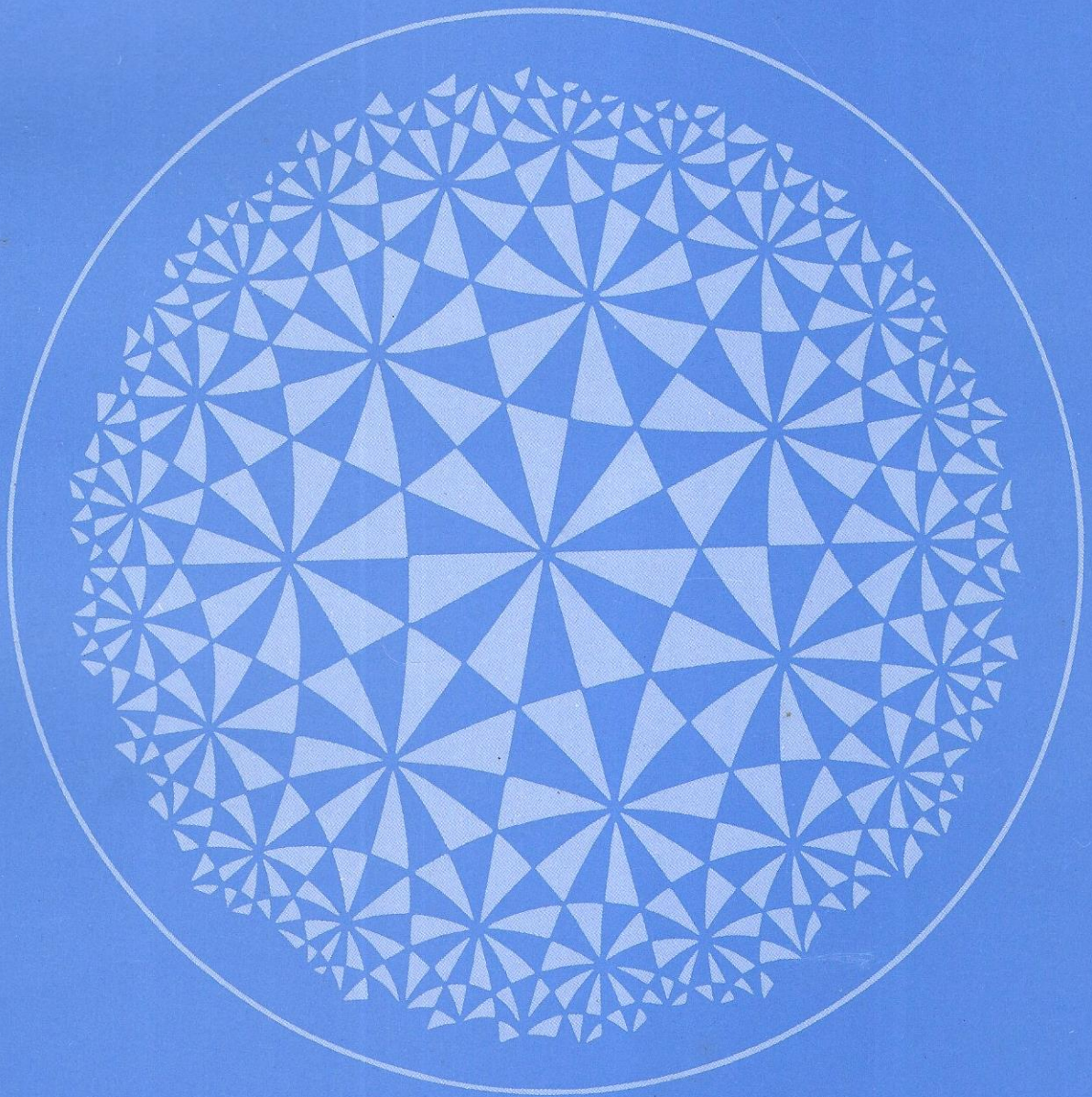
GEOMETRY BLOCK

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UNIT 1
DIFFERENTIATION



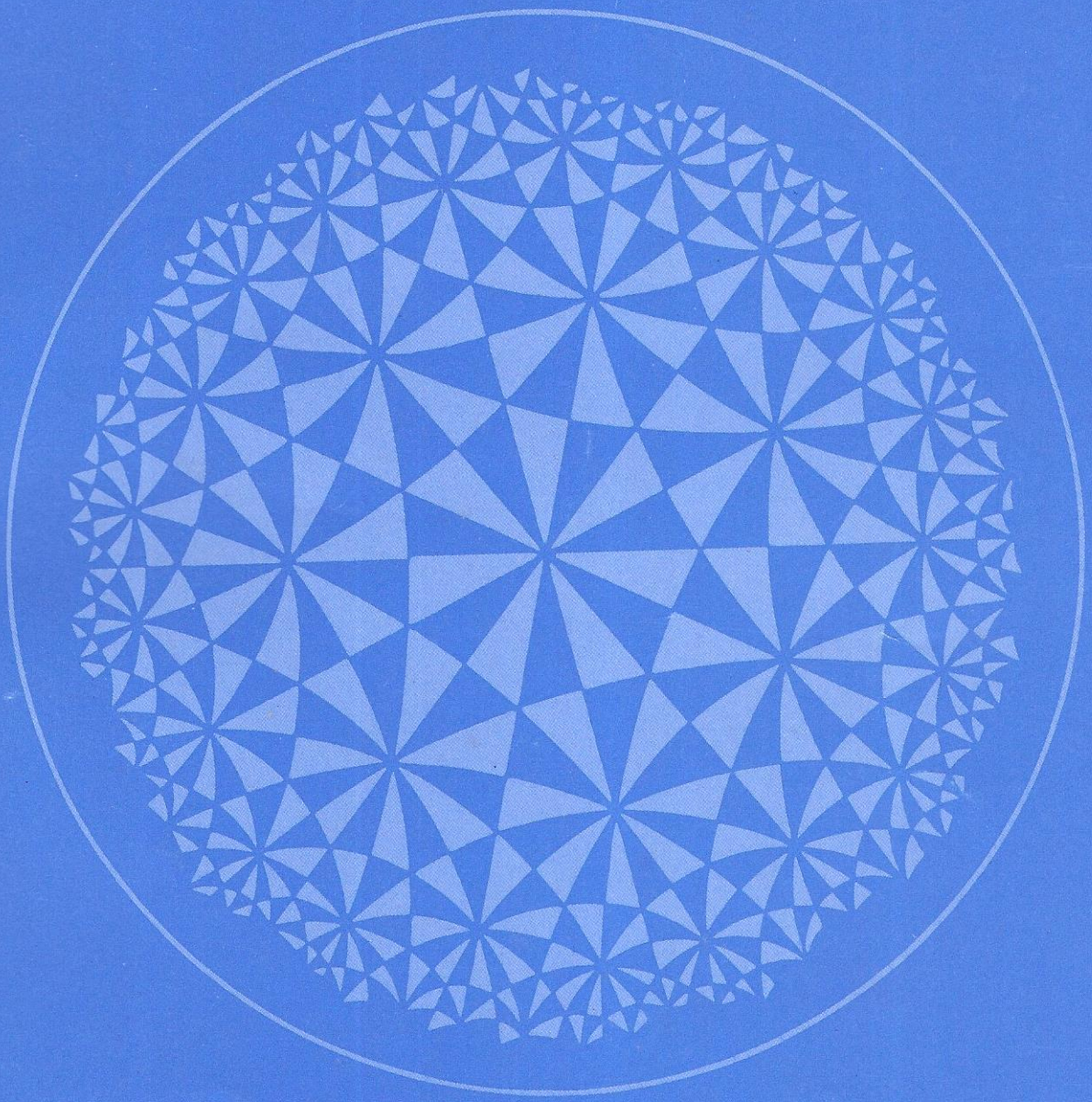
ANALYSIS BLOCK B

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UNIT 2
INTEGRATION



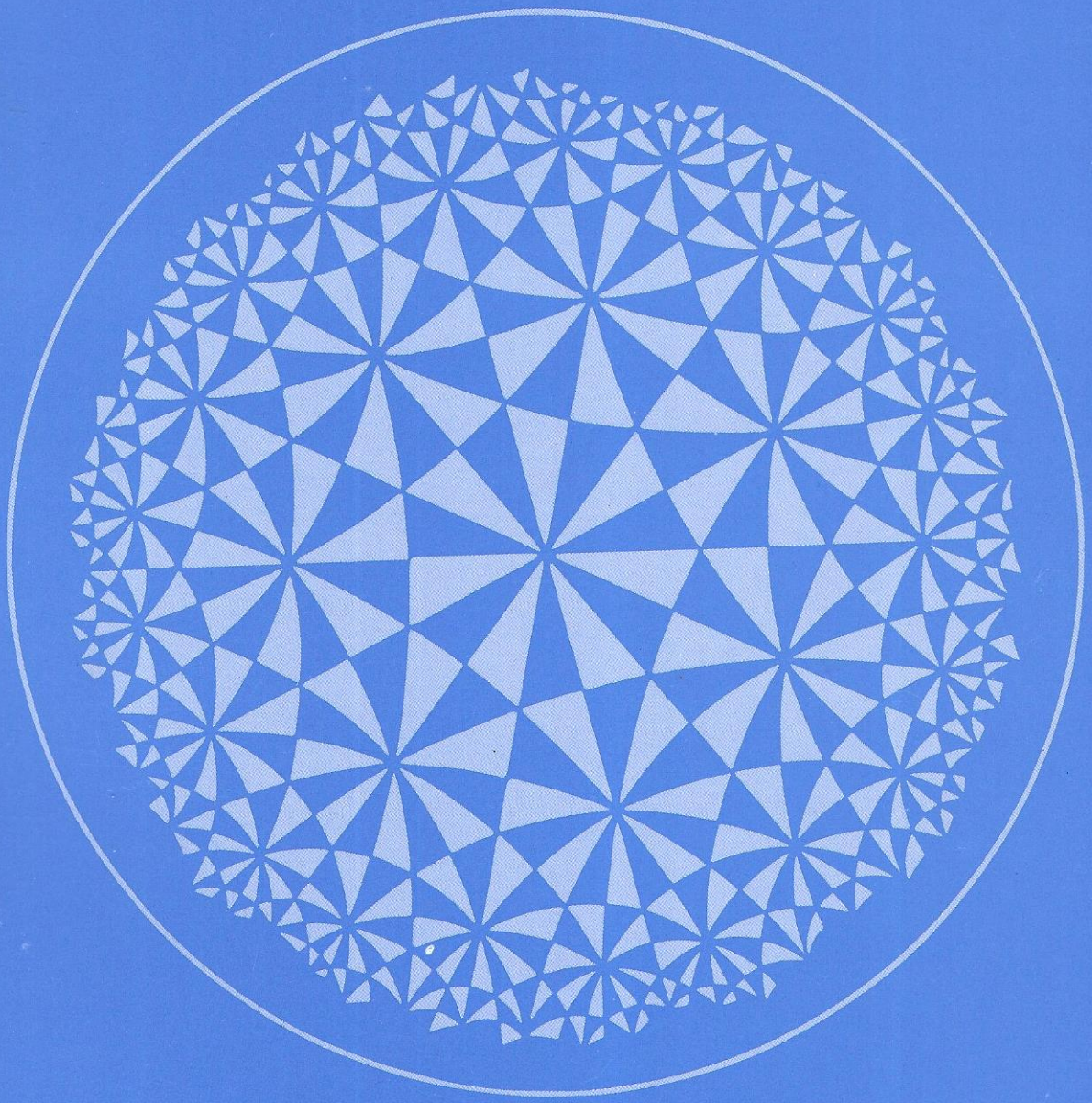
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M203 AB3



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UNIT 3
POWER SERIES



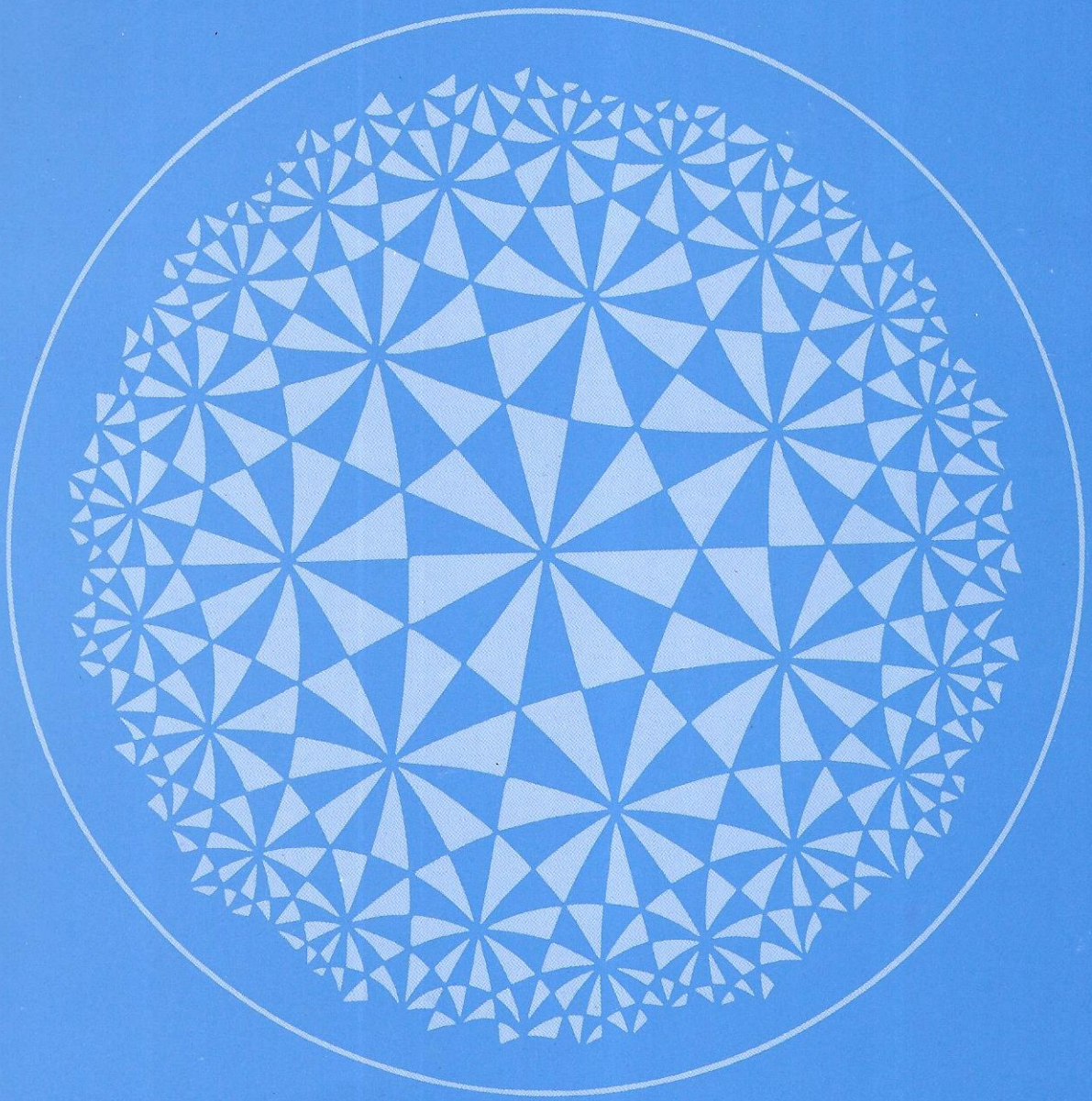
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M203 AB4



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UNIT 4
DIFFERENTIAL EQUATIONS AND FLOWS



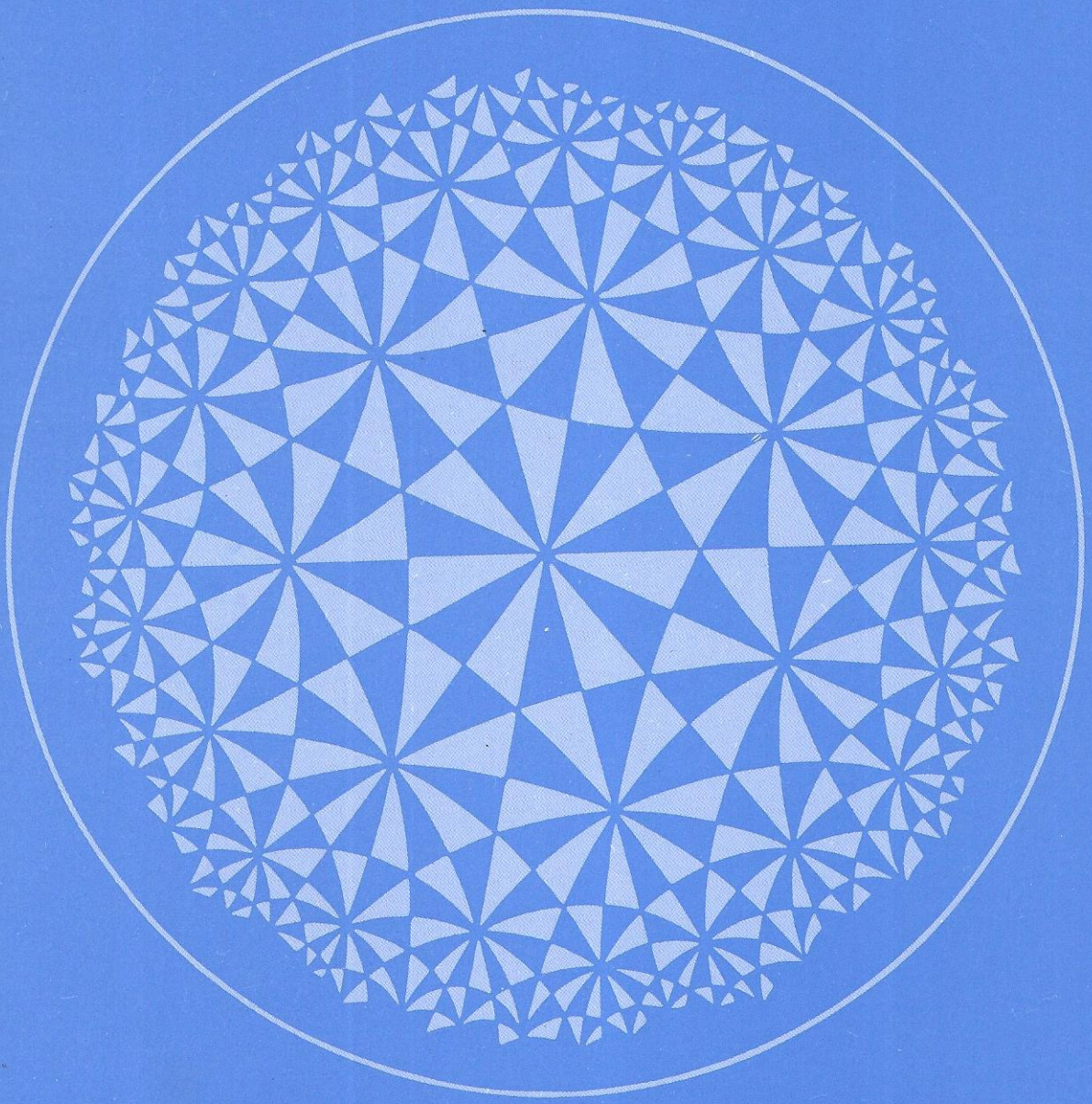
ANALYSIS BLOCK B

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UNIT 5
PROOFS IN ANALYSIS



ANALYSIS BLOCK B

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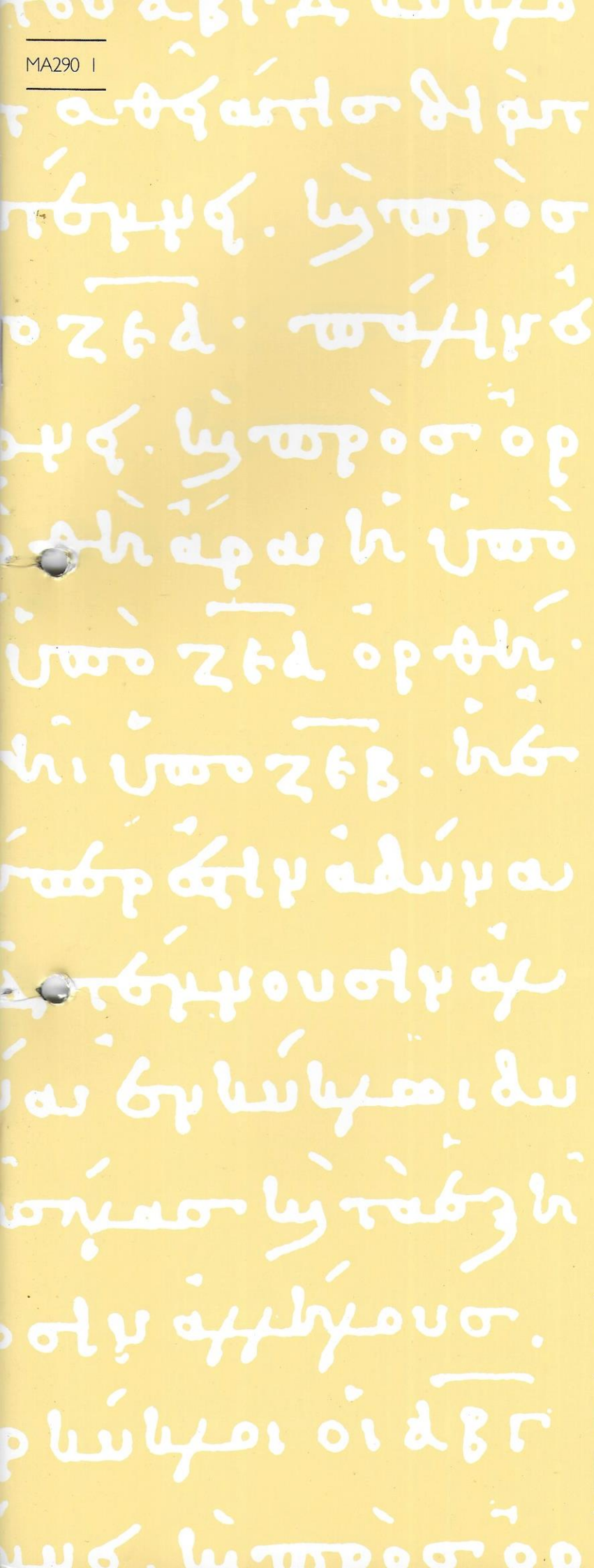
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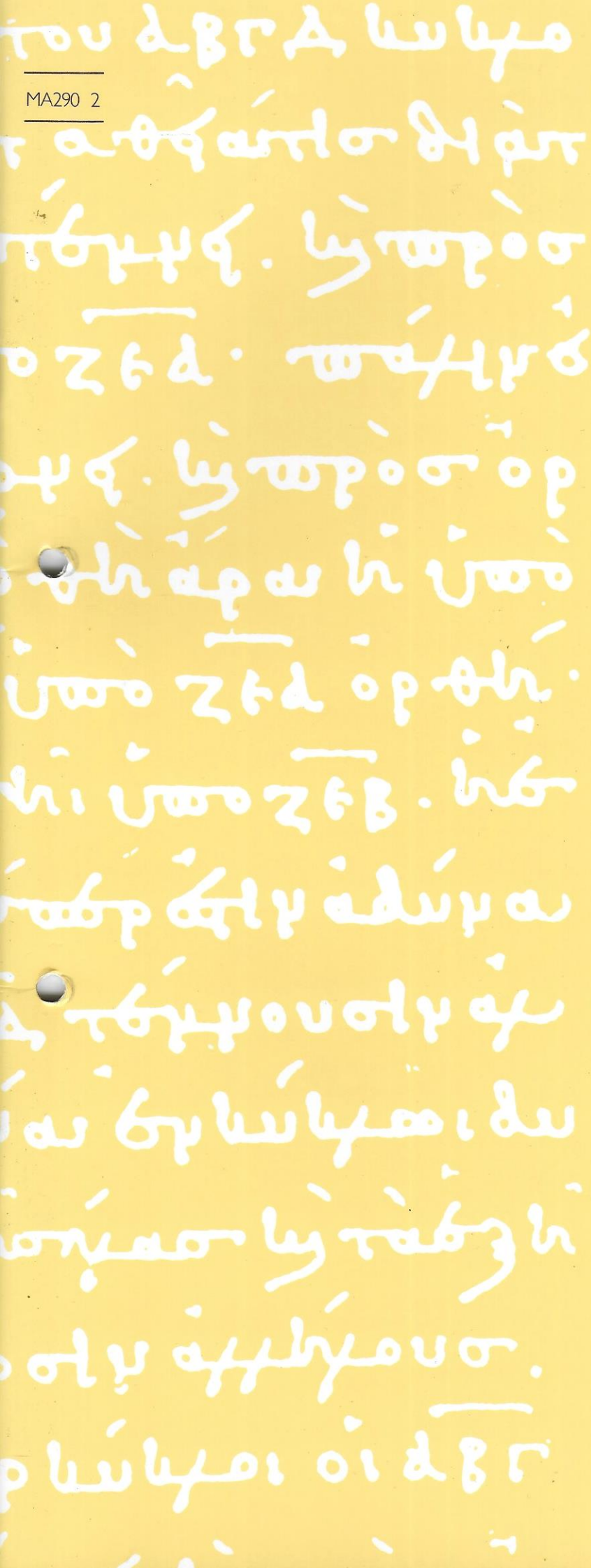


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BLOCK 1 MATHEMATICS IN THE ANCIENT WORLD

UNIT 1

EARLY MATHEMATICS

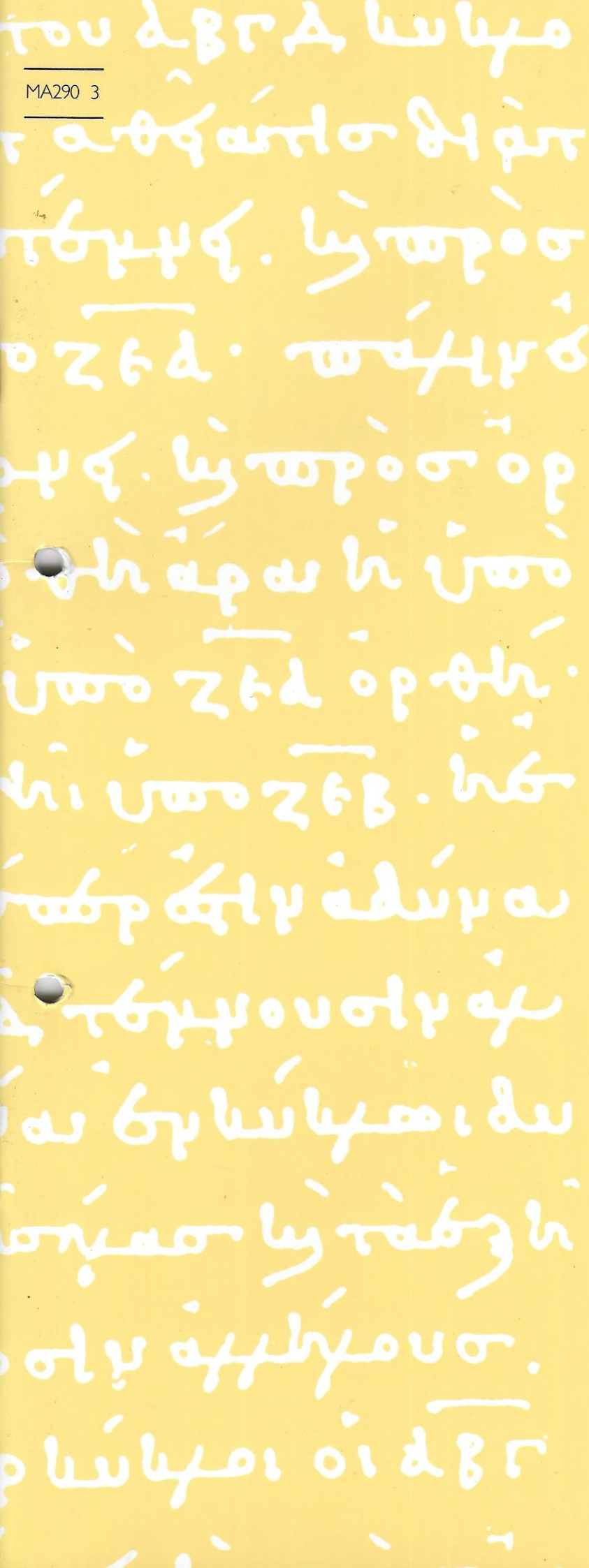


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BLOCK I . MATHEMATICS IN THE ANCIENT WORLD

UNIT 2

MATHEMATICS IN THE GREEK WORLD



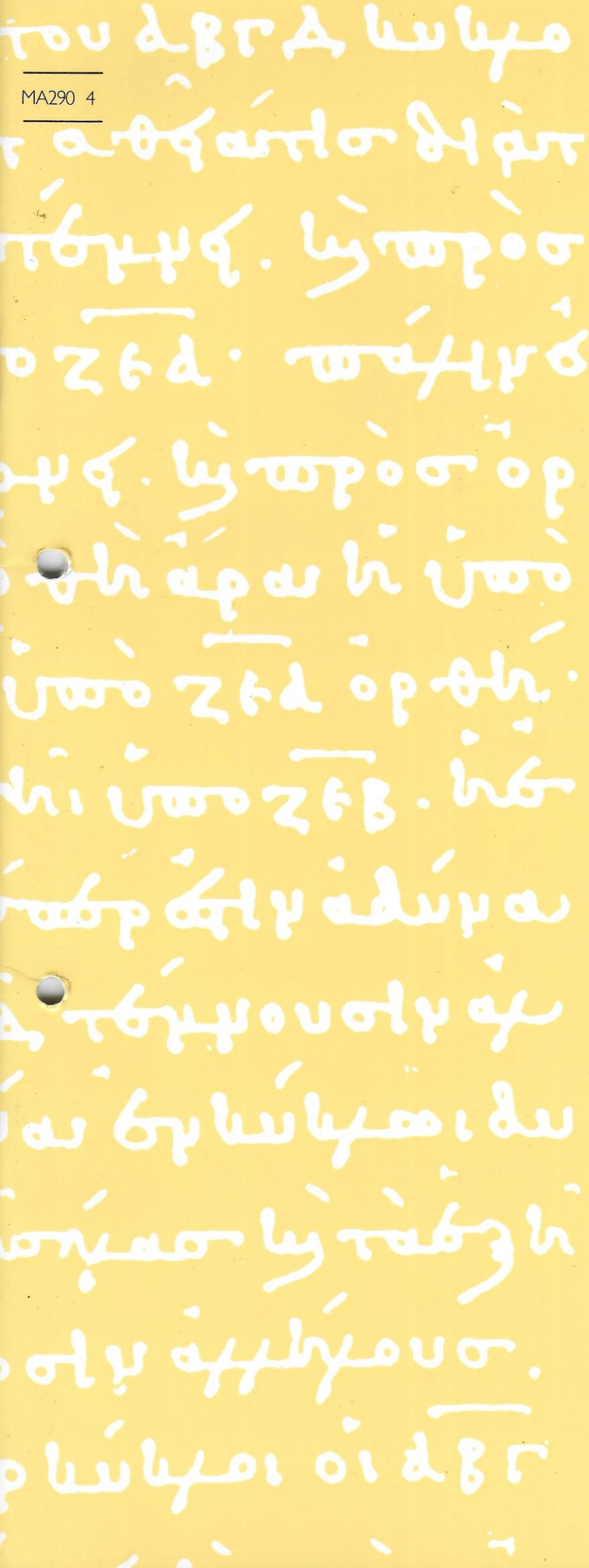
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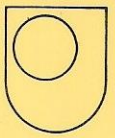
BLOCK I . MATHEMATICS IN THE ANCIENT WORLD

UNIT 3

THE GREEK CONCEPT OF PROOF



MA290 4



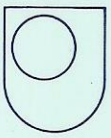
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BLOCK I . MATHEMATICS IN THE ANCIENT WORLD

UNIT 4

THE GREEK STUDY OF CURVES

MA290 5



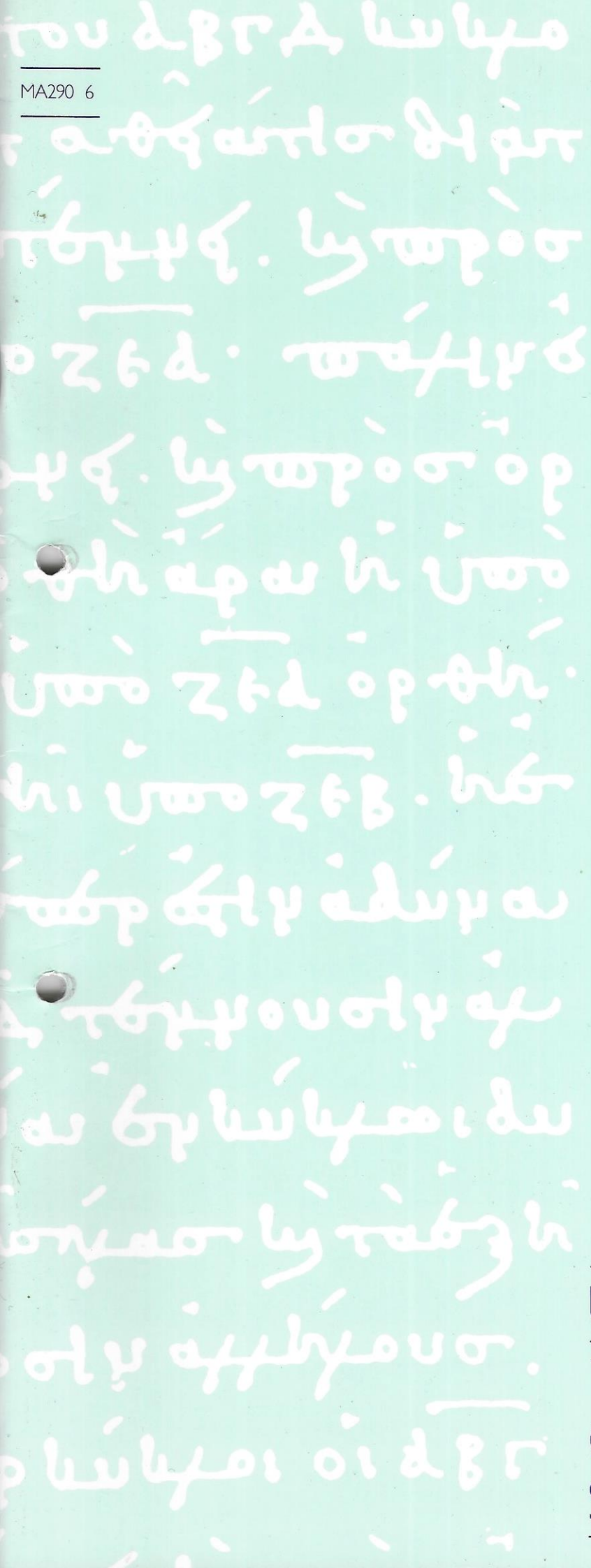
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BLOCK 2 FROM THE MIDDLE AGES TO THE SEVENTEENTH CENTURY

UNIT 5

FROM THE GREEKS TO THE RENAISSANCE

MA290 6

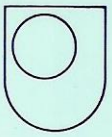


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BLOCK 2 FROM THE MIDDLE AGES TO THE SEVENTEENTH CENTURY

UNIT 6

THE RENAISSANCE OF MATHEMATICAL SCIENCES IN BRITAIN



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BLOCK 2 FROM THE MIDDLE AGES TO THE SEVENTEENTH CENTURY

UNIT 7

EUROPEAN MATHEMATICS IN THE EARLY SEVENTEENTH CENTURY

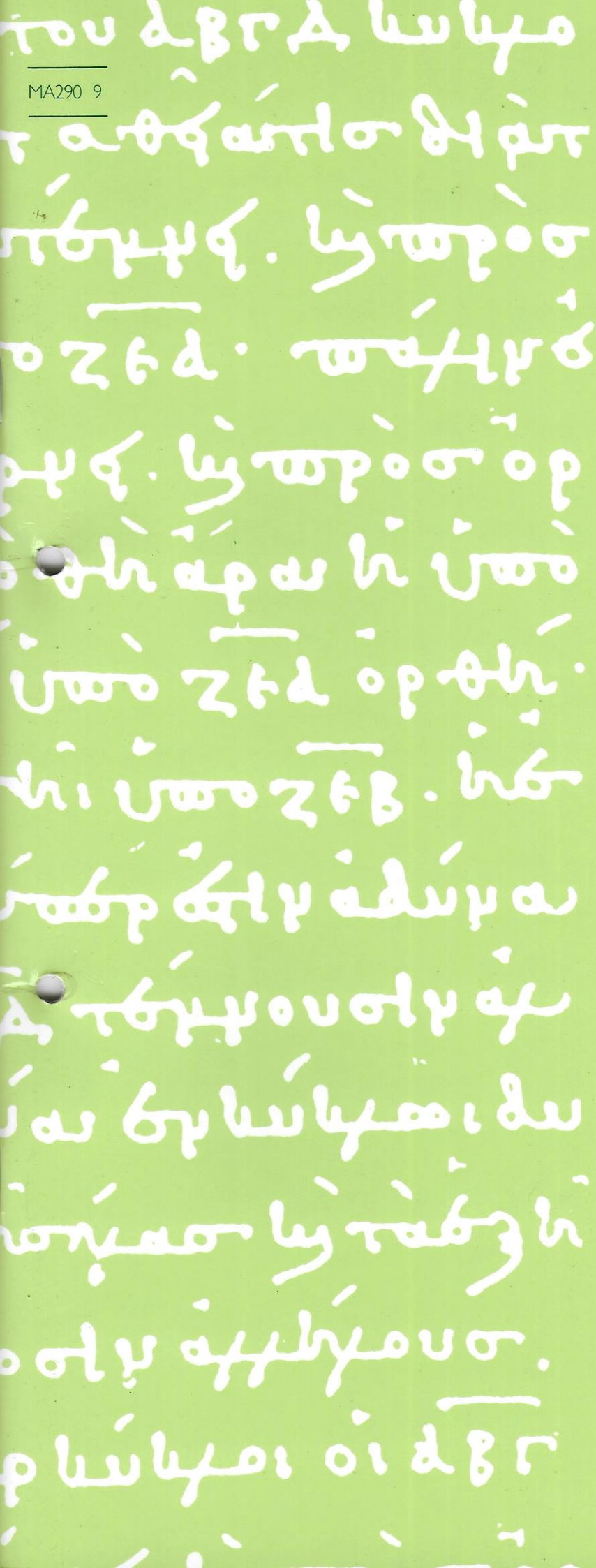
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BLOCK 2. FROM THE MIDDLE AGES TO THE SEVENTEENTH CENTURY

UNIT 8

DESCARTES: ALGEBRA AND GEOMETRY

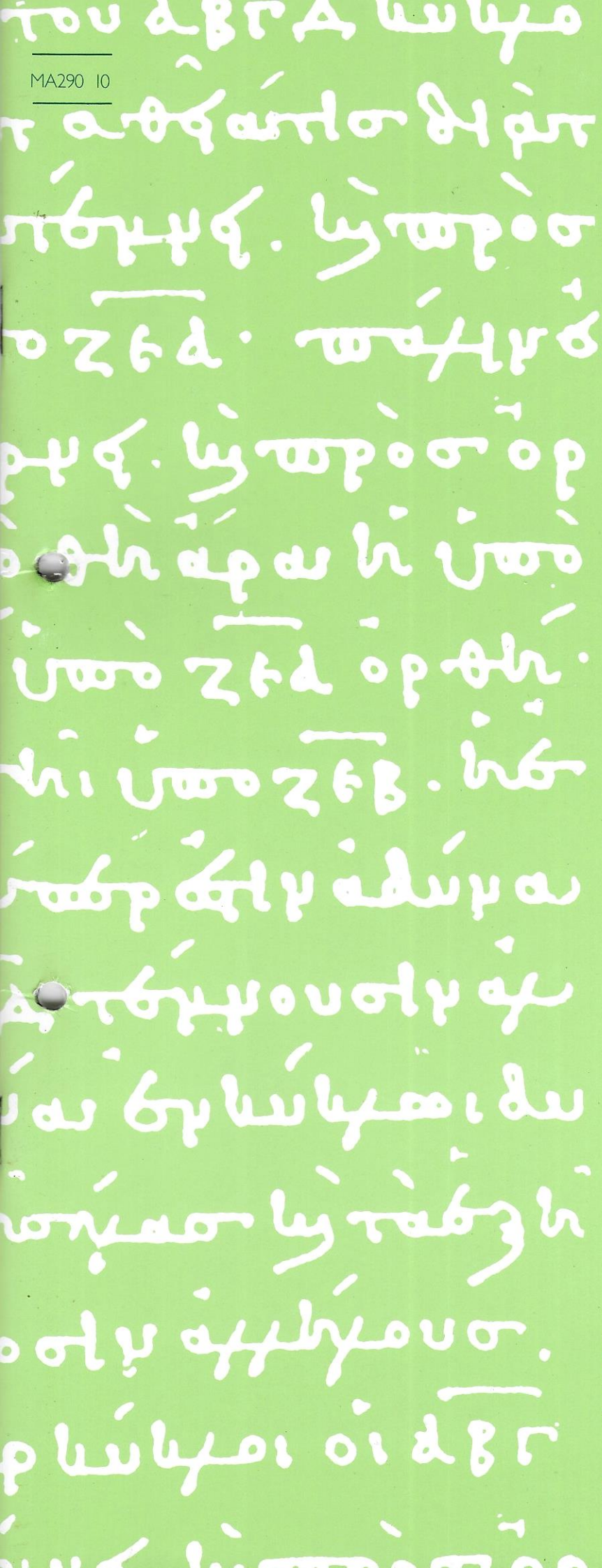


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BLOCK 3 THE SEVENTEENTH AND EIGHTEENTH CENTURIES

UNIT 9

THE ROUTE TO THE CALCULUS



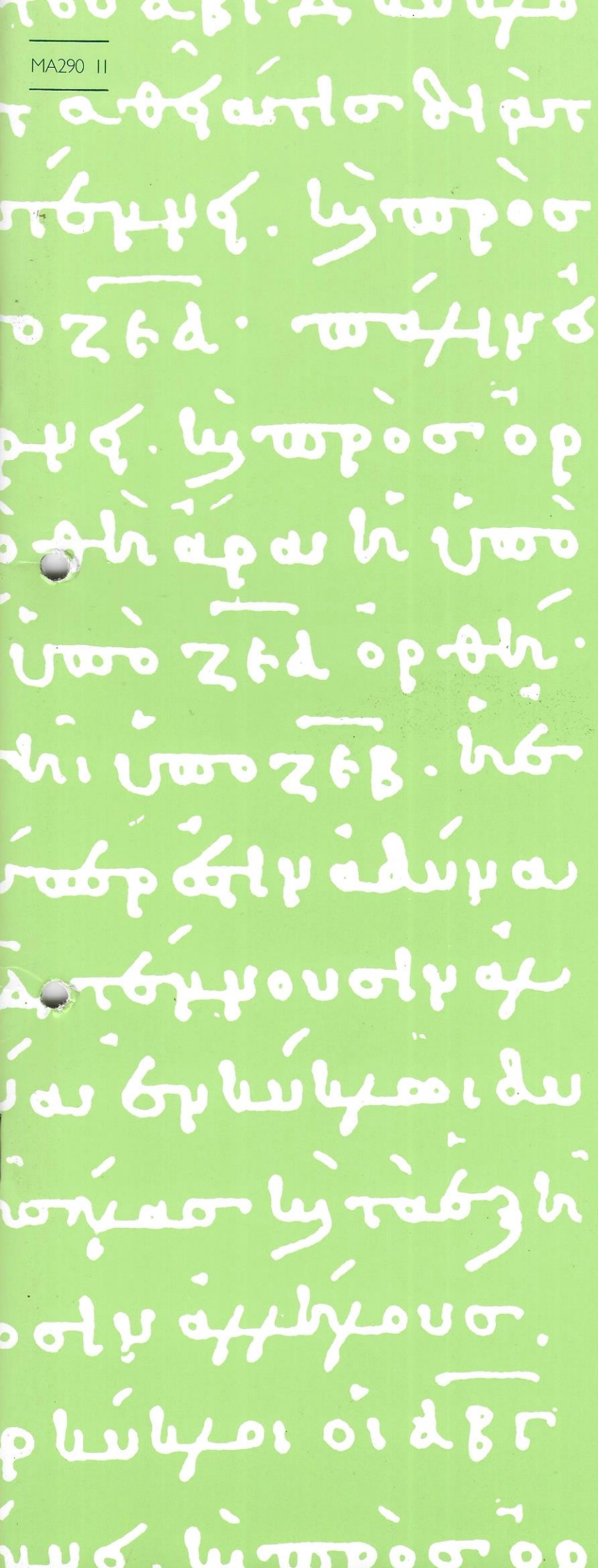
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BLOCK 3 THE SEVENTEENTH AND EIGHTEENTH CENTURIES

UNIT 10

THE DEVELOPMENT OF THE CALCULUS



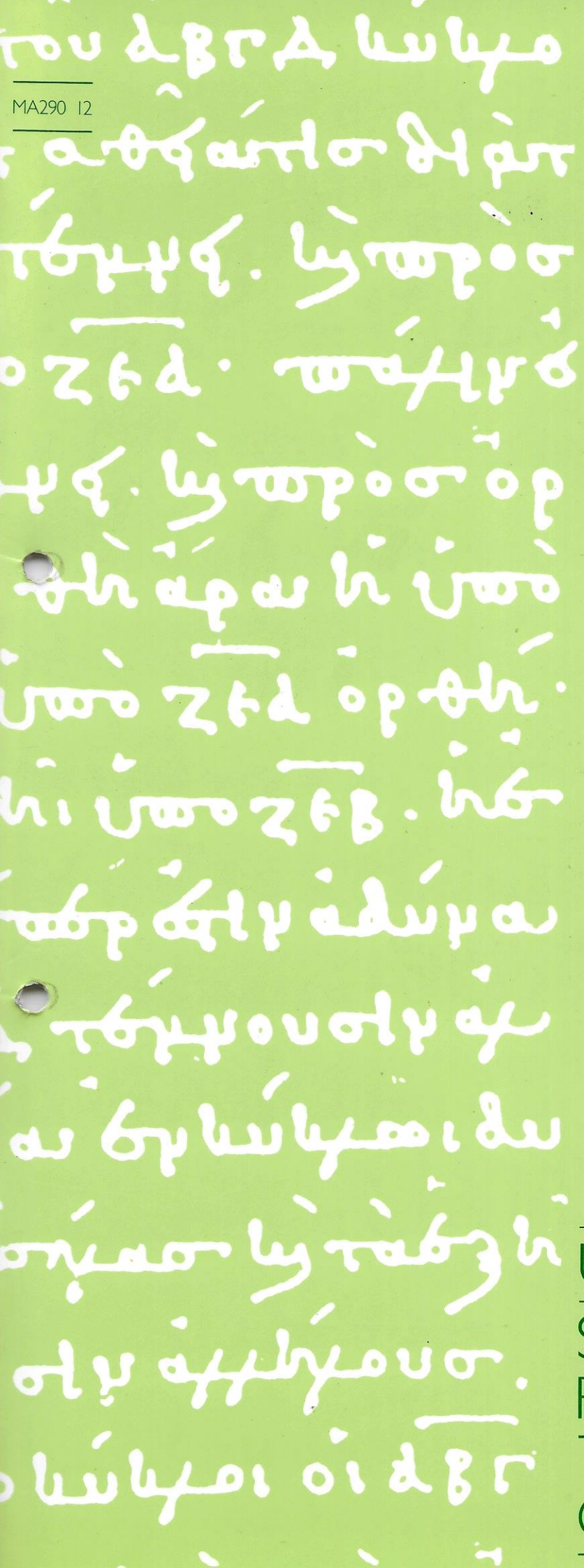
MA290 11

THE OPEN UNIVERSITY
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AN INTERFACULTY SECOND LEVEL COURSE
MA290: TOPICS IN THE HISTORY OF MATHEMATICS

BLOCK 3 THE SEVENTEENTH AND EIGHTEENTH CENTURIES

UNIT 11

MATHEMATICAL PHYSICS AND THE SYSTEM OF THE WORLD



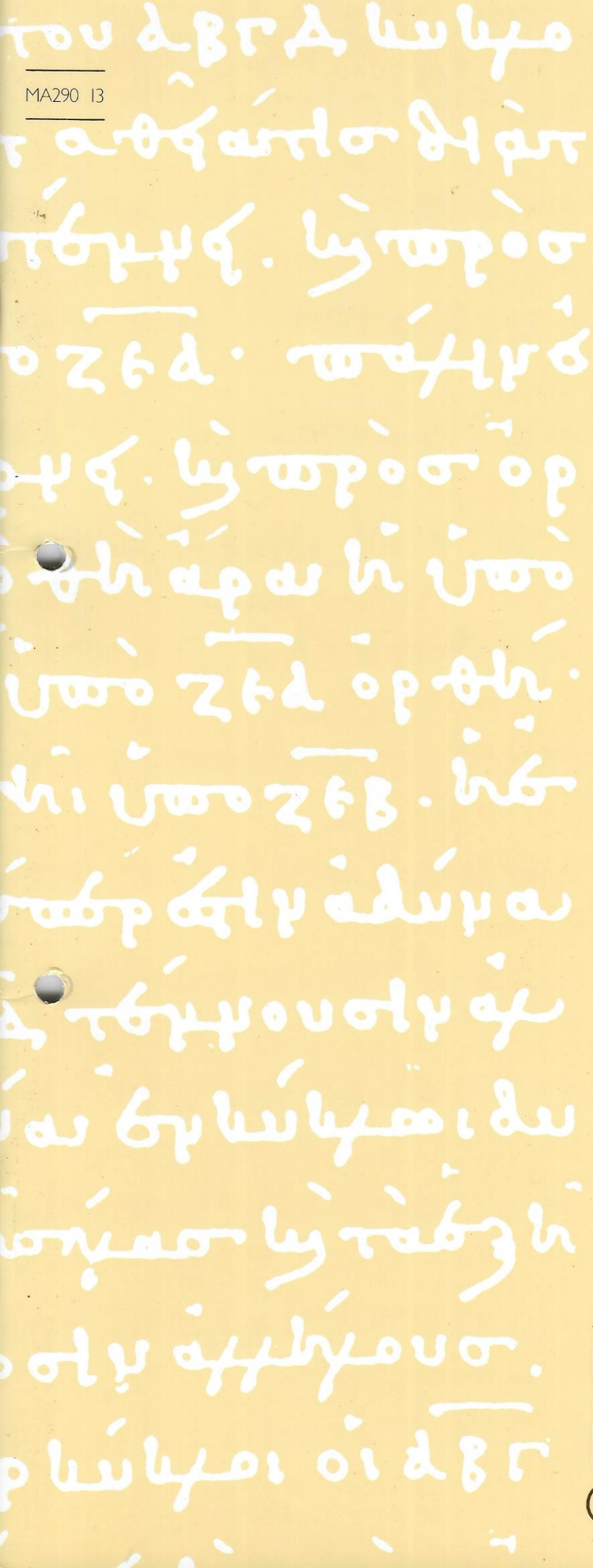
MA290 12

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MA290: TOPICS IN THE HISTORY OF MATHEMATICS

BLOCK 3 THE SEVENTEENTH AND EIGHTEENTH CENTURIES

UNIT 12

STYLE AND FORMALISM IN THE EIGHTEENTH CENTURY



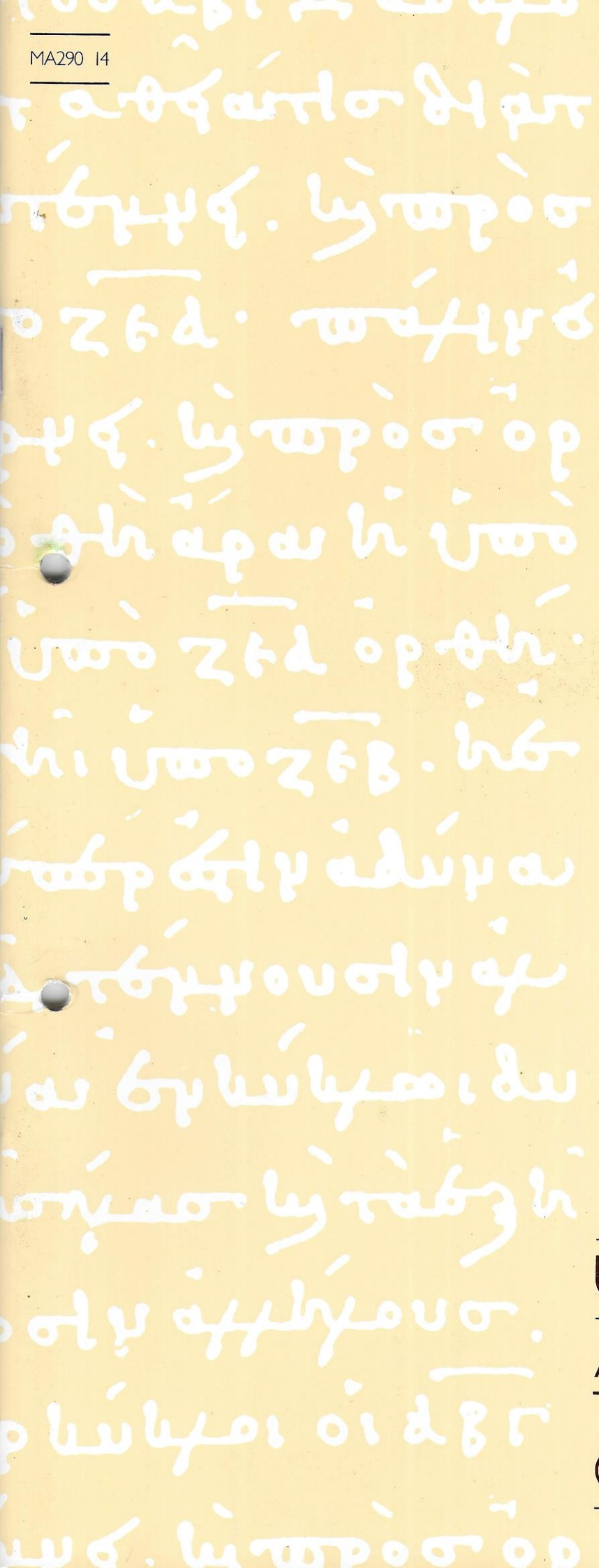
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MA290: TOPICS IN THE HISTORY OF MATHEMATICS

BLOCK 4. TOPICS IN NINETEENTH-CENTURY MATHEMATICS

UNIT 13

NON-EUCLIDEAN GEOMETRY

MA290 14



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MA290: TOPICS IN THE HISTORY OF MATHEMATICS

BLOCK 4 TOPICS IN NINETEENTH-CENTURY MATHEMATICS

UNIT 14

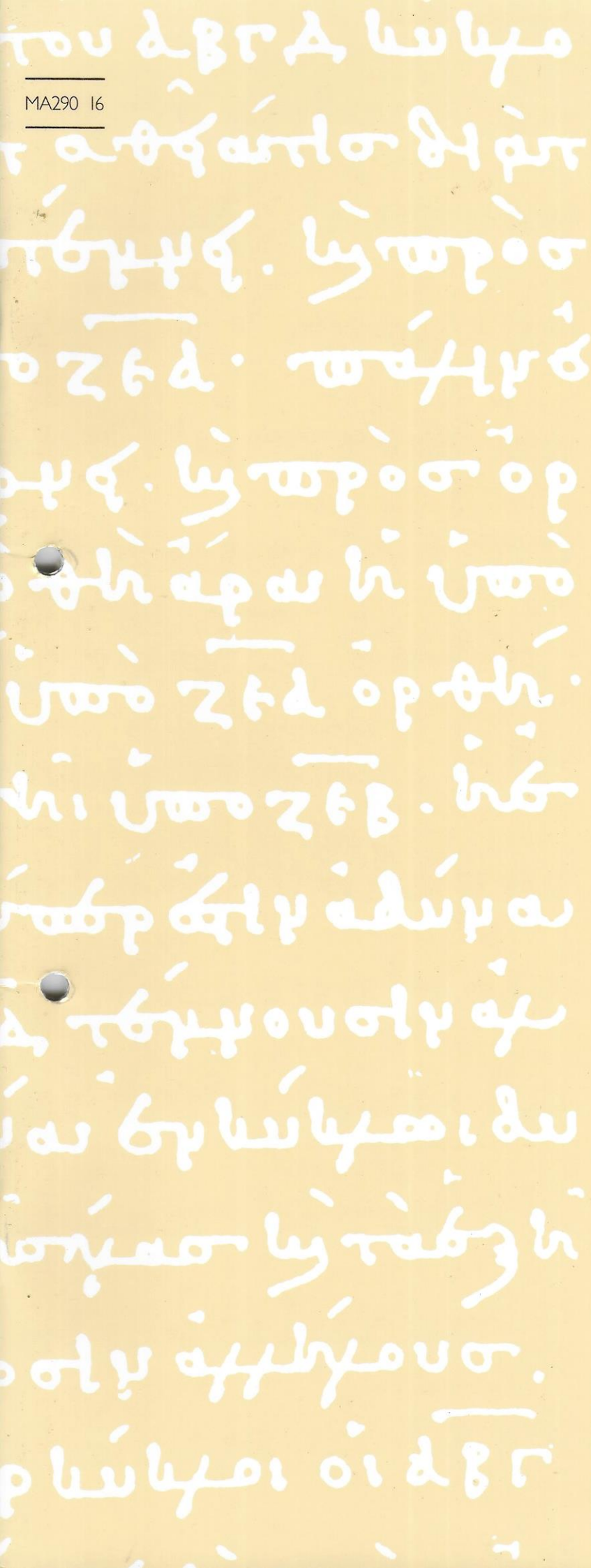
ALGEBRA AND THE PROFESSION OF MATHEMATICS

THE OPEN UNIVERSITY
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AN INTERFACULTY SECOND LEVEL COURSE
MA290: TOPICS IN THE HISTORY OF MATHEMATICS

BLOCK 4 · TOPICS IN NINETEENTH-CENTURY MATHEMATICS

UNIT 15

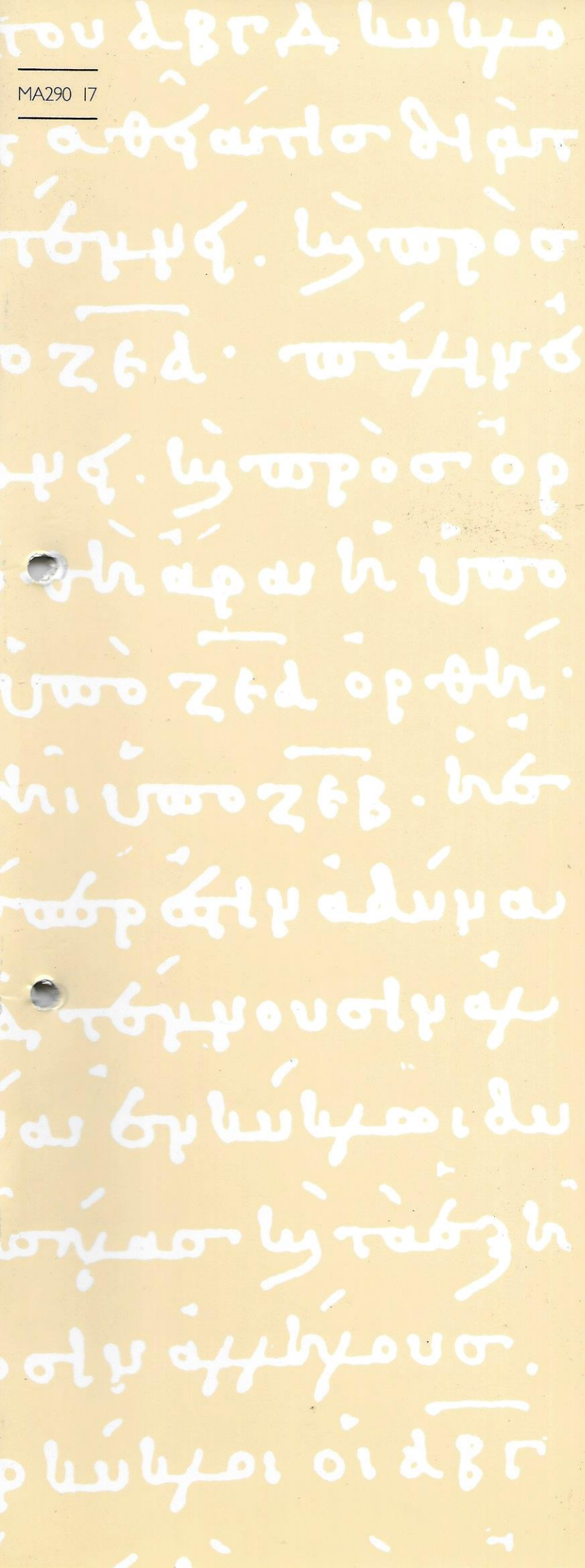
PROJECTIVE GEOMETRY AND THE AXIOMATISATION OF MATHEMATICS



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BLOCK 4 · TOPICS IN NINETEENTH-CENTURY MATHEMATICS

UNIT 16
FUNDAMENTALS



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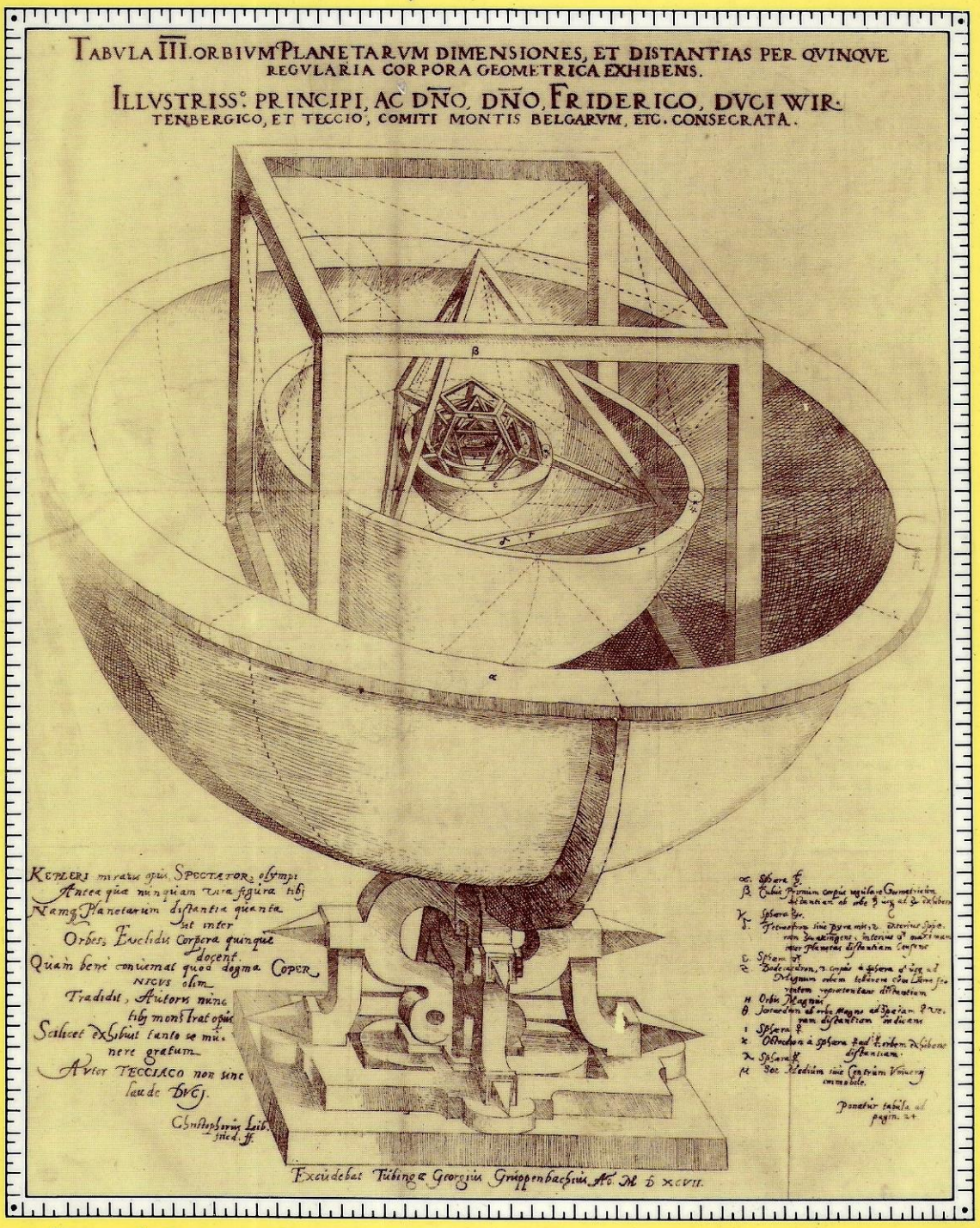
BLOCK 4 TOPICS IN NINETEENTH-CENTURY MATHEMATICS

UNIT 17

TOPICS IN THE HISTORY OF COMPUTING

THE HISTORY OF MATHEMATICS

~A READER~



edited by John Fauvel and Jeremy Gray

The Open University

THE HISTORY OF MATHEMATICS

Today's mathematics is a result of the mathematical activity of many centuries. It has, indeed, a longer history than any other science. Yet obtaining access to the many sources for discovering the mathematical past is not easy. Those that survive are scattered far and wide, and written in all manner of languages. This selection aims to bring together a sample of the wealth of evidence of past mathematical practice, and show the role mathematics has played in culture and belief.

The readings in this book have been selected from a wide variety of sources to show the nature and development of mathematics from earliest times to the twentieth century. The book sets mathematical activities in context and includes not only formal mathematical texts and discussions by historians of mathematics, but also letters between mathematicians, diary entries, and biographical judgements. There are also a number of poems and extracts from plays and novels which give evidence of beliefs about mathematics and mathematicians at different times.

A large number of the extracts have never been anthologized before, and many are here translated into English for the first time.

Both editors are Lecturers in Mathematics at the Open University.

John Fauvel is co-editor of *Darwin to Einstein: Historical Studies on Science and Belief* and of *Conceptions of Inquiry*.

Jeremy Gray is author of *Ideas of Space* and *Linear Differential Equations and Group Theory from Riemann to Poincaré*, and is co-author of *The Geometrical Work of Girard Desargues*.

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ISBN 0-333-42791-2

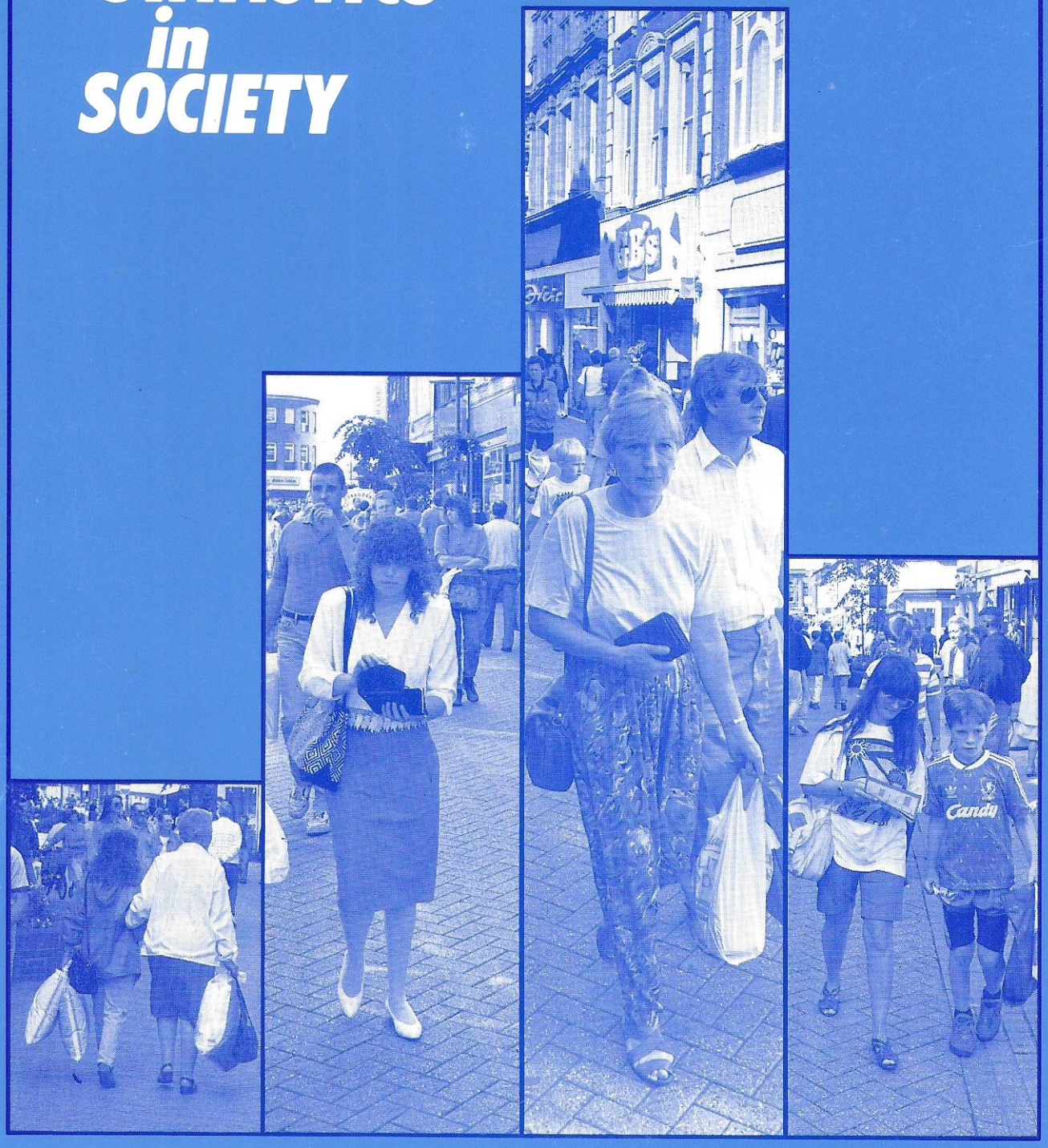
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MDST242 A0

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Unit A0 Introduction

STATISTICS in SOCIETY



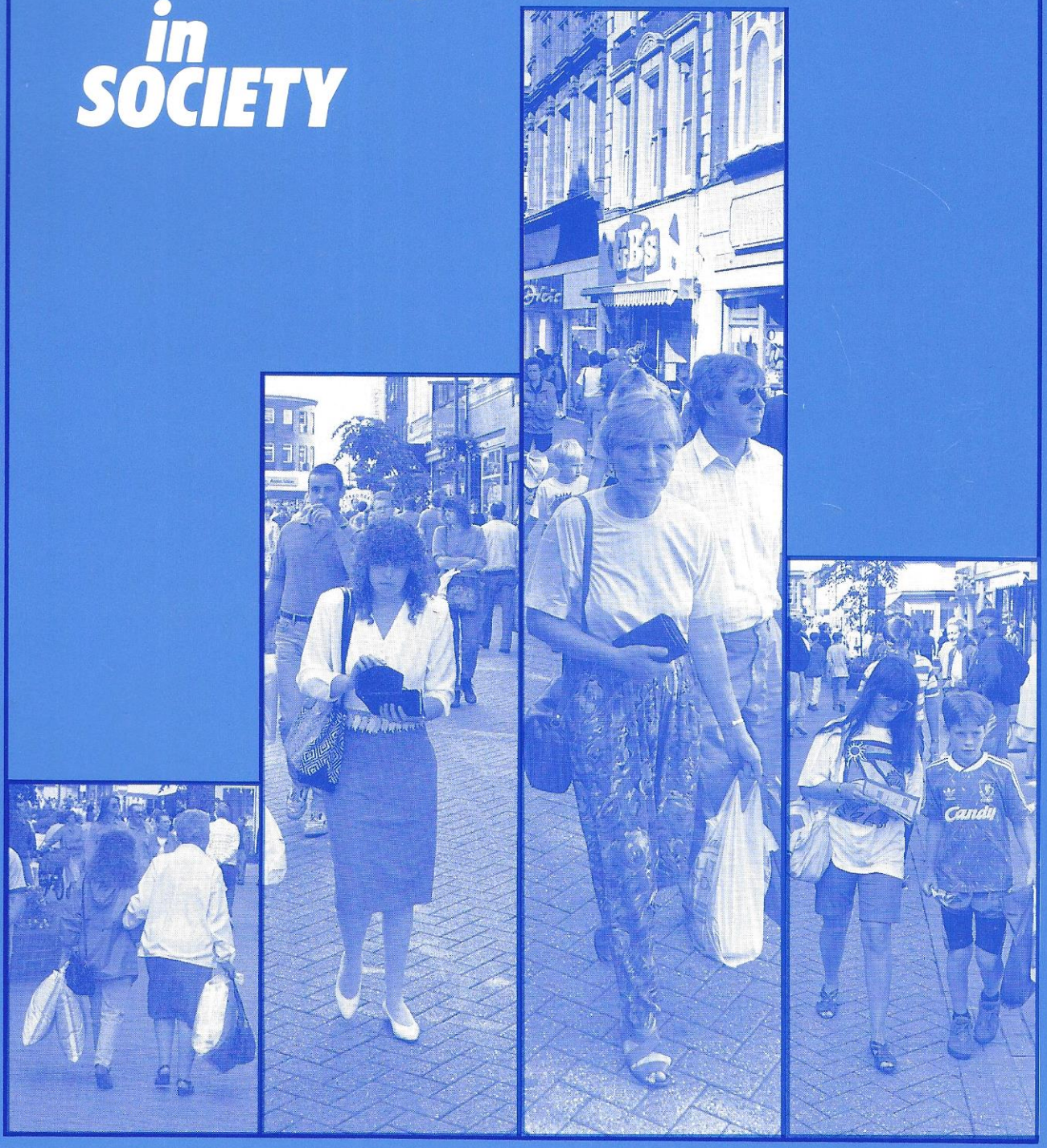
An inter-faculty second level course

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Unit A1 Prices

STATISTICS in SOCIETY



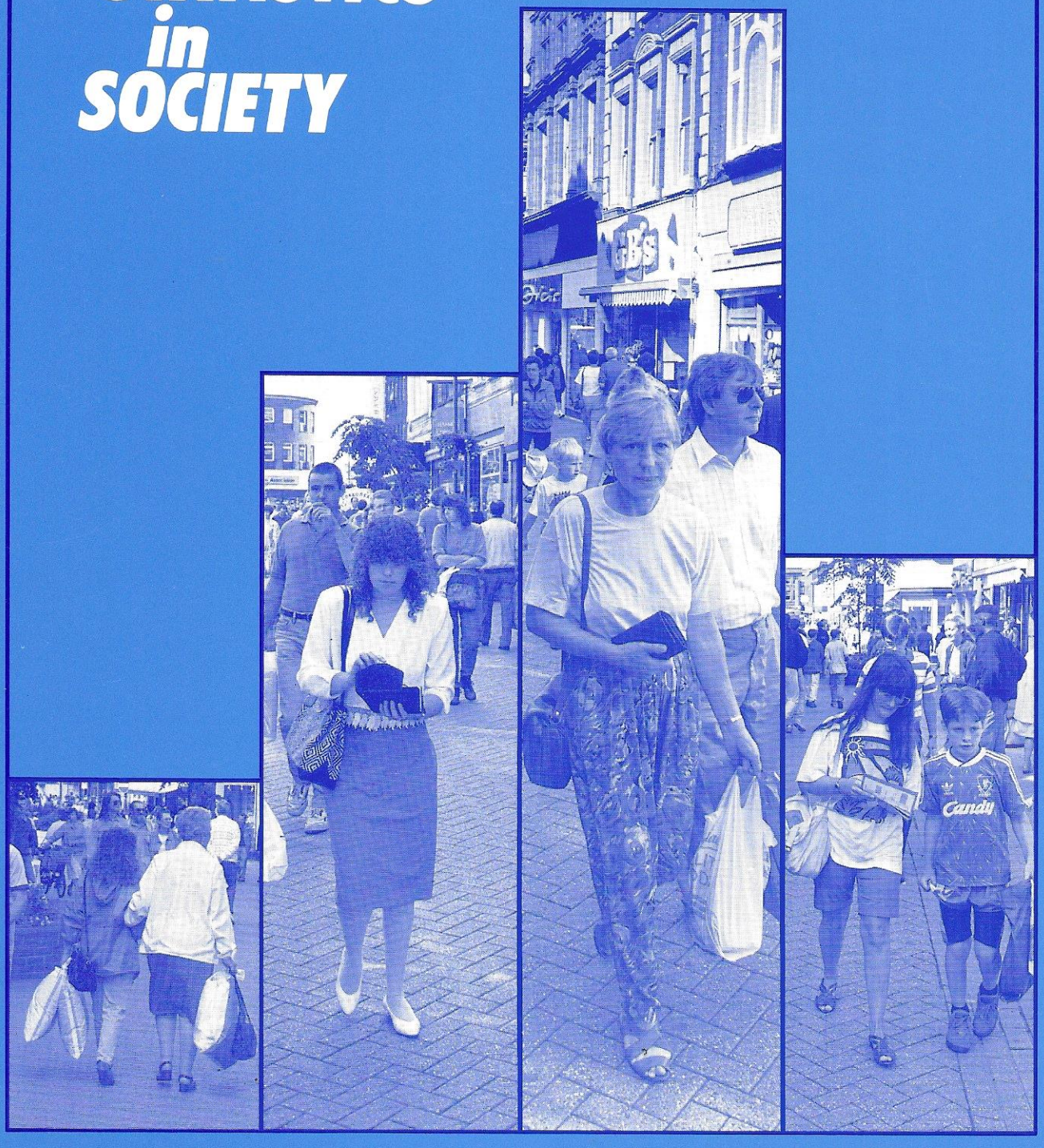
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Unit A2 Earnings

STATISTICS in SOCIETY



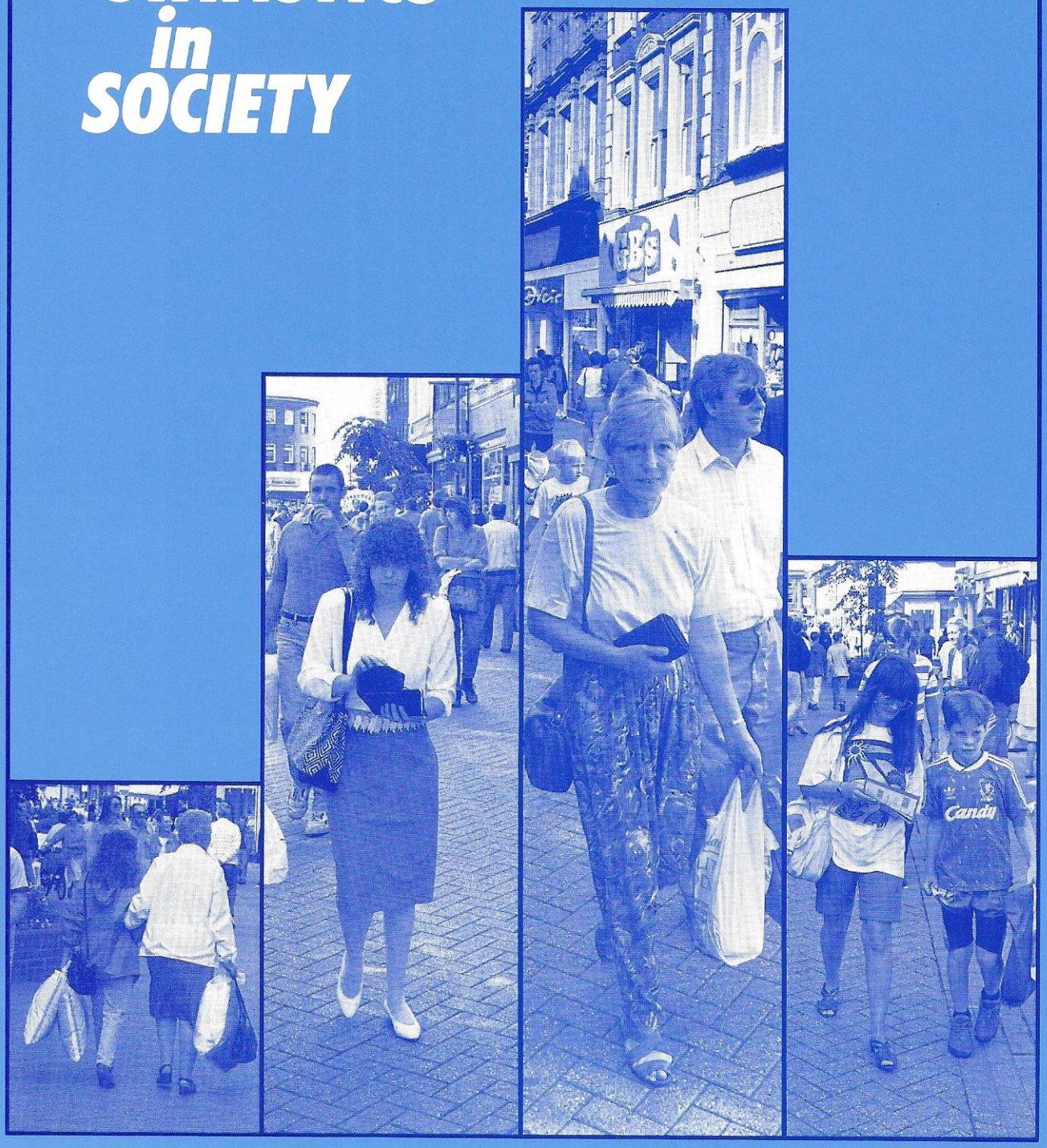
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Unit A3 Surveys

STATISTICS in SOCIETY



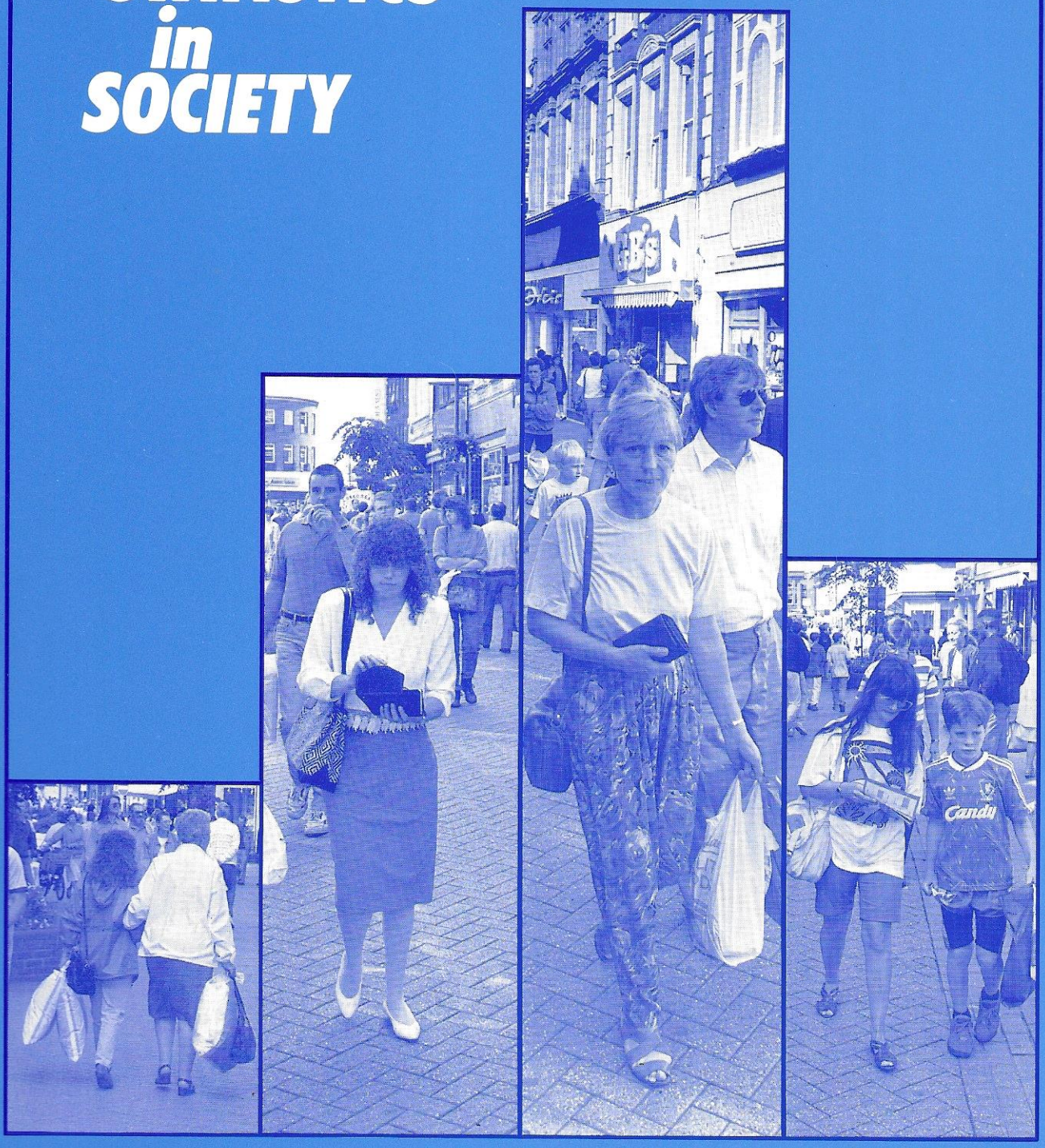
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Unit A4 Relationships

STATISTICS in SOCIETY



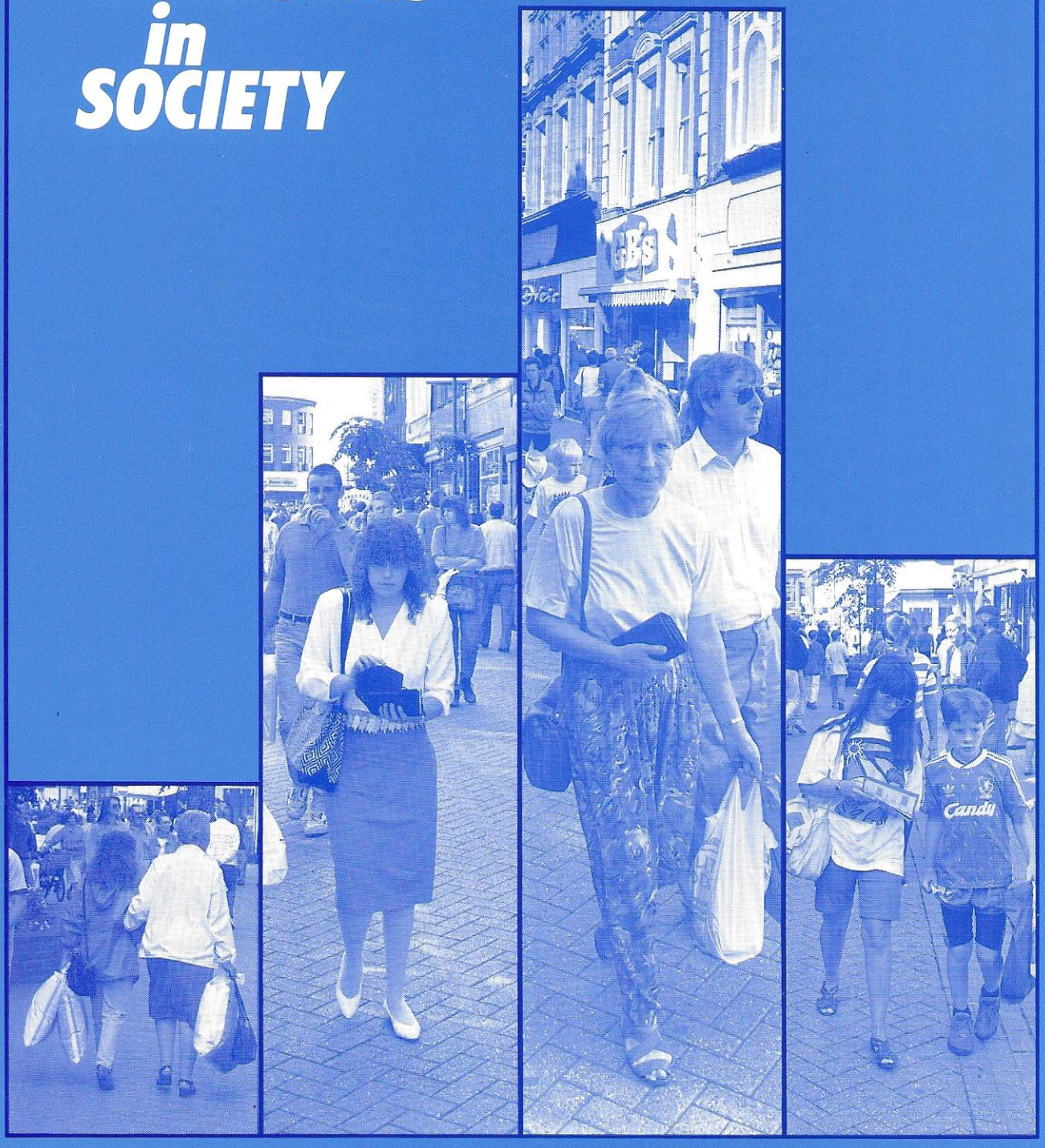
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Unit A5 Review

STATISTICS in SOCIETY



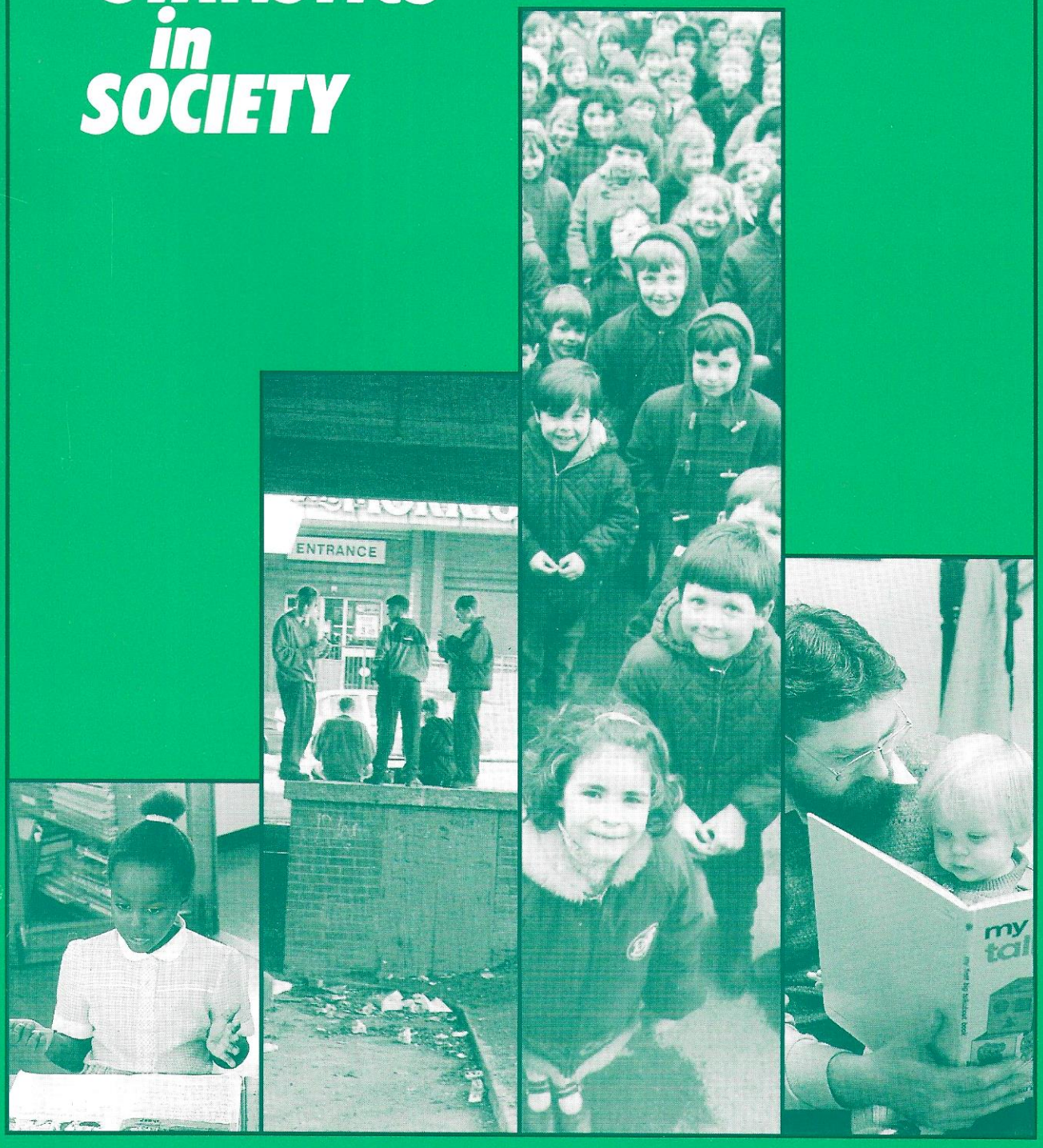
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Unit B1 Truancy

STATISTICS in SOCIETY



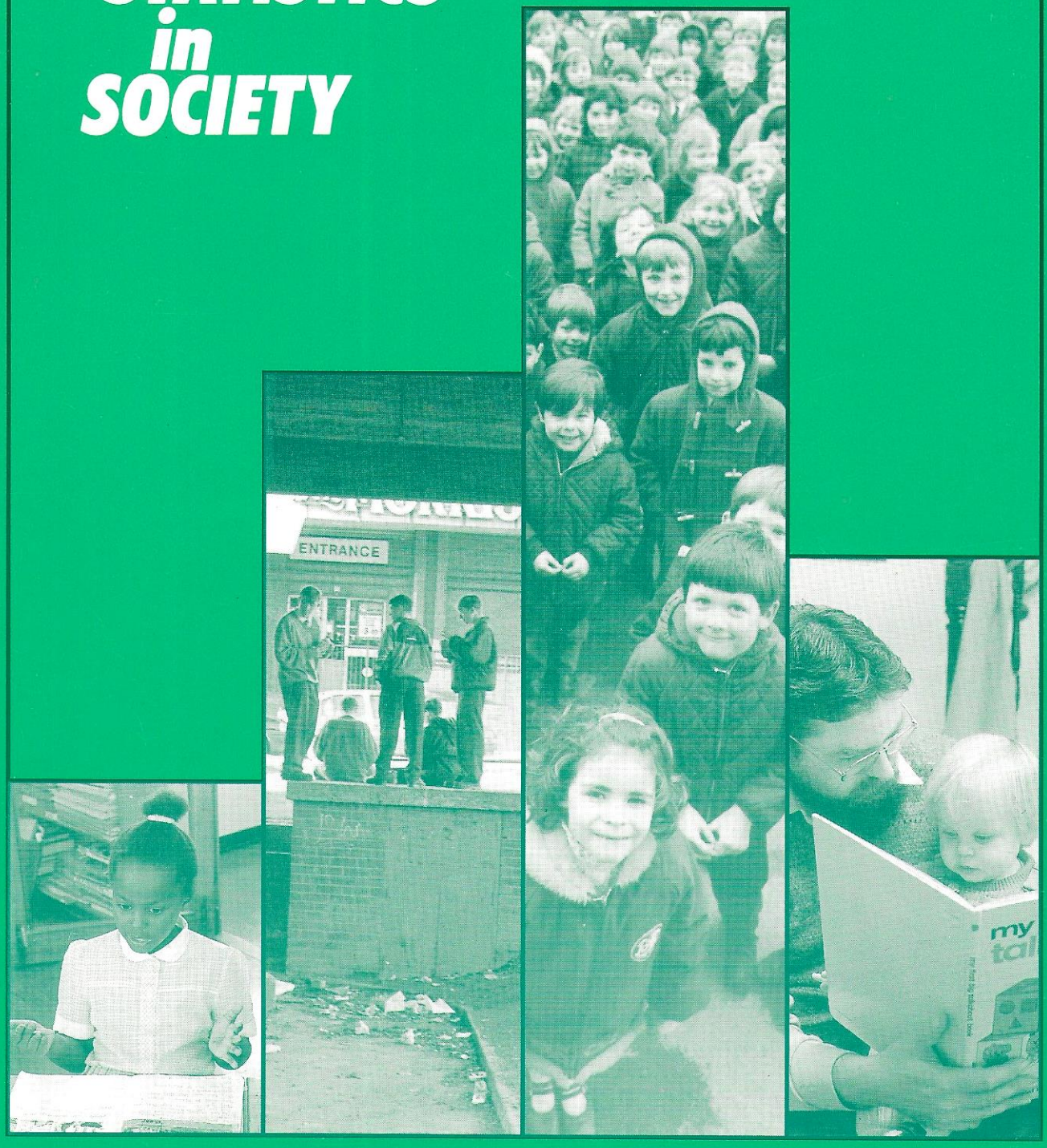
An inter-faculty second level course

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Unit B2 Class size

STATISTICS in SOCIETY



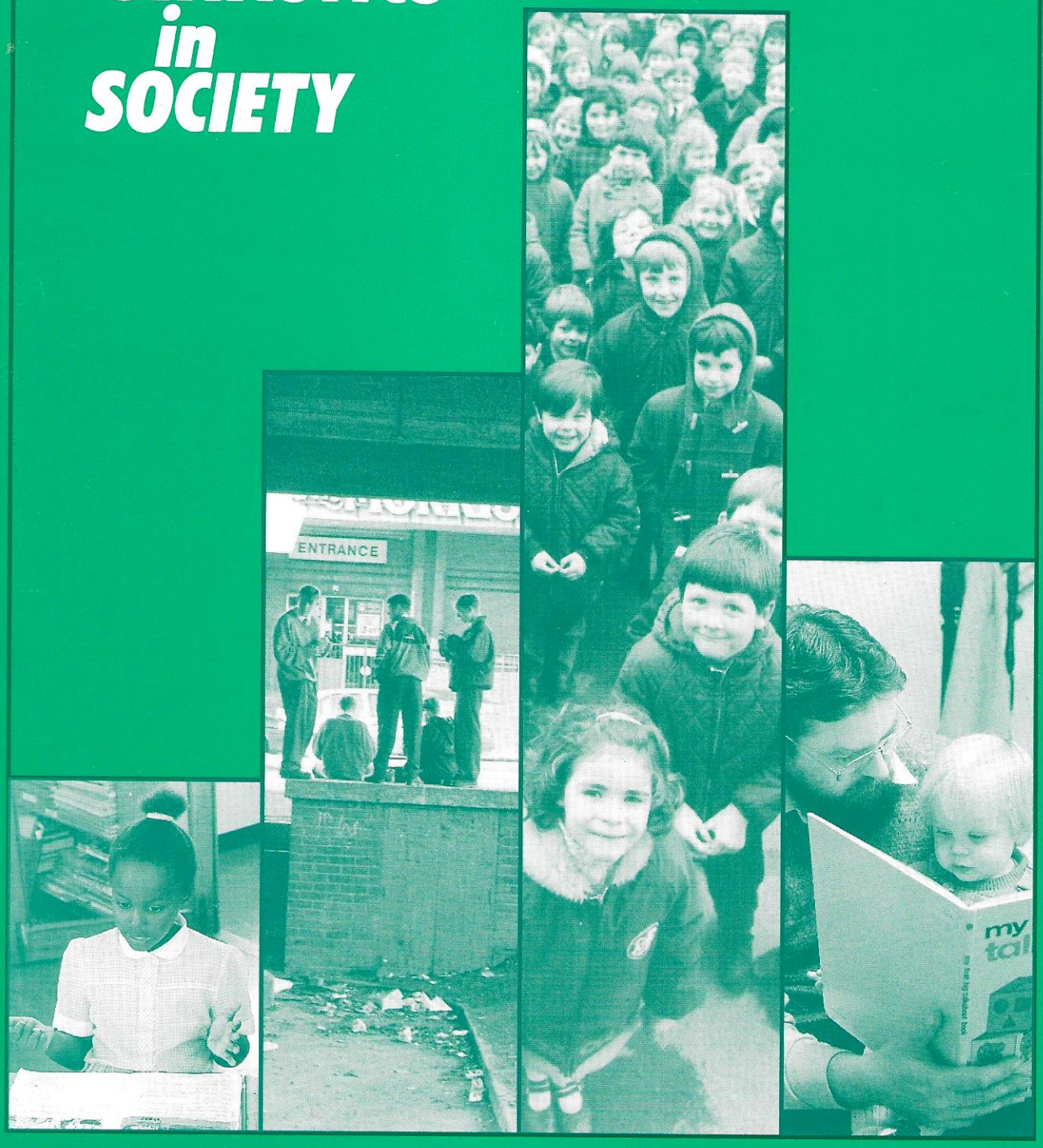
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Unit B3 Reading aloud

STATISTICS in SOCIETY



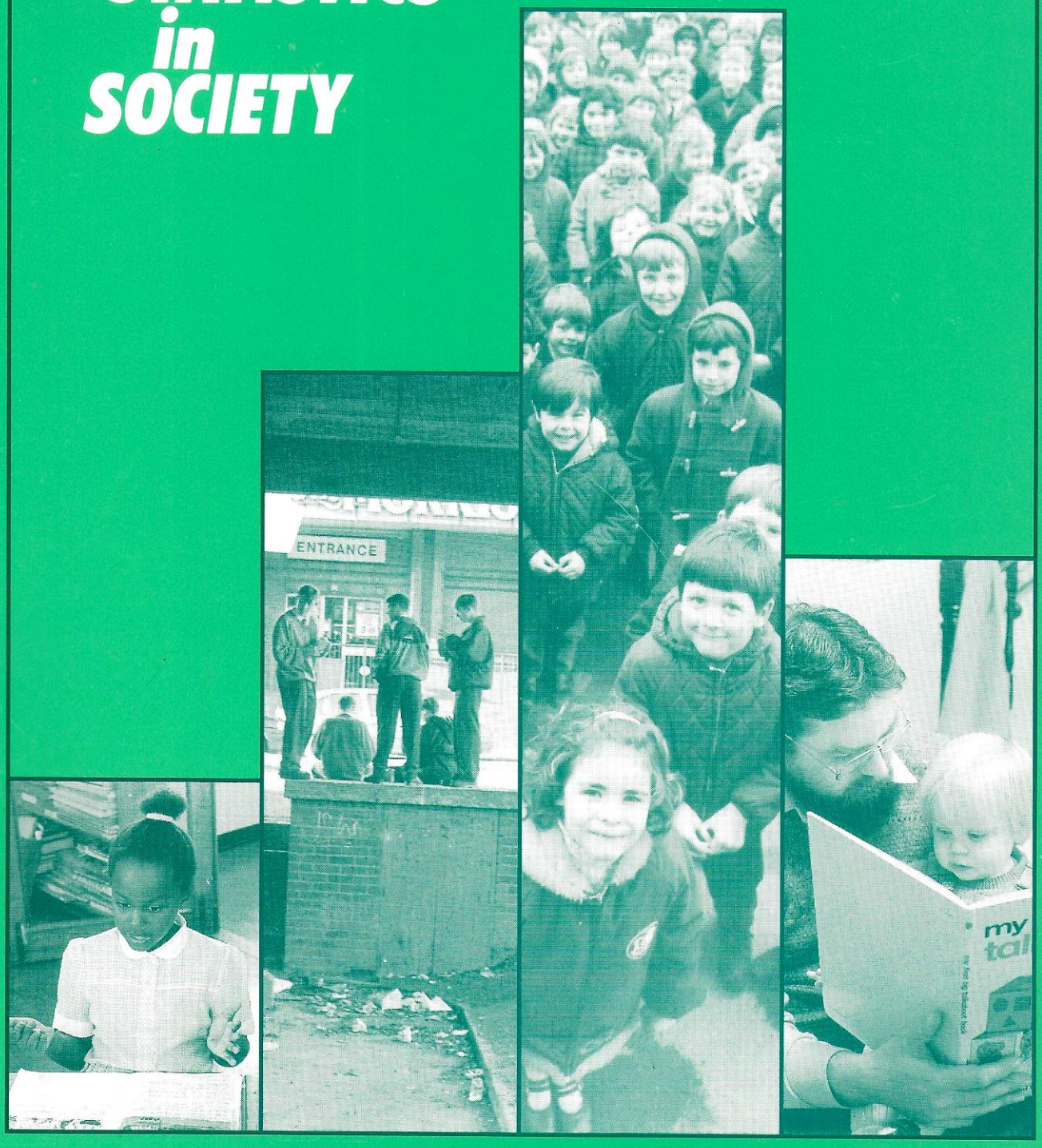
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MDST242 B4

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Unit B4 Factors affecting reading

STATISTICS in SOCIETY



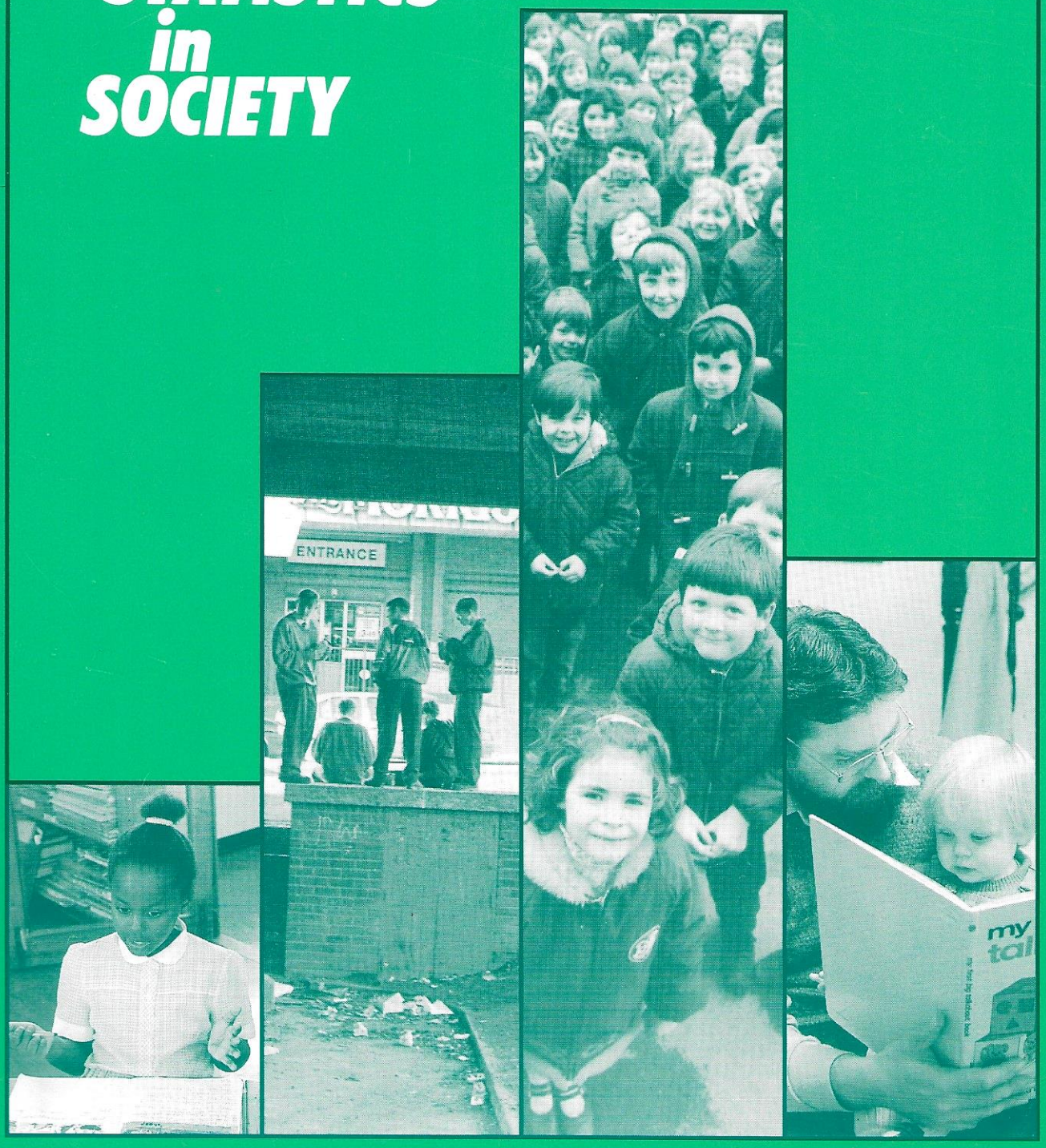
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Unit B5 Review

STATISTICS in SOCIETY



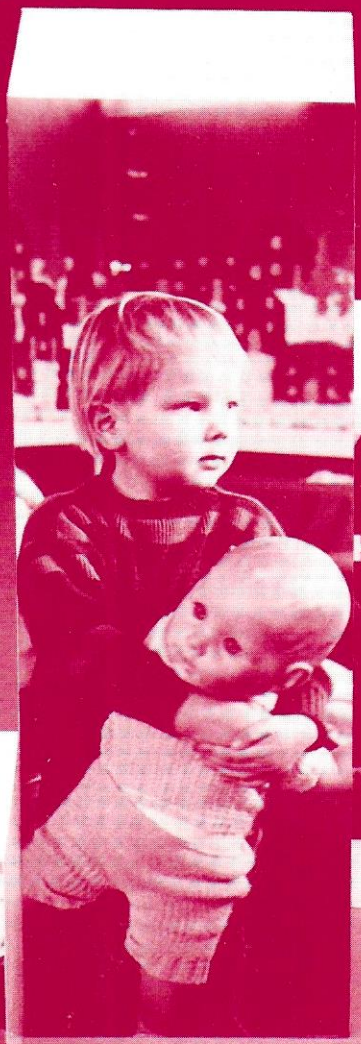
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MDST 242 C1

The Open University
Mathematics/Social Sciences/Science/Technology
An inter-faculty second level course

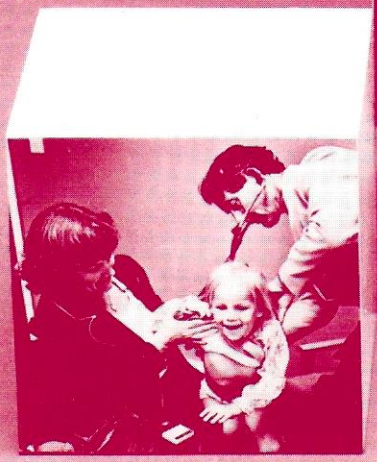
Unit C1 Testing new drugs

STATISTICS in SOCIETY









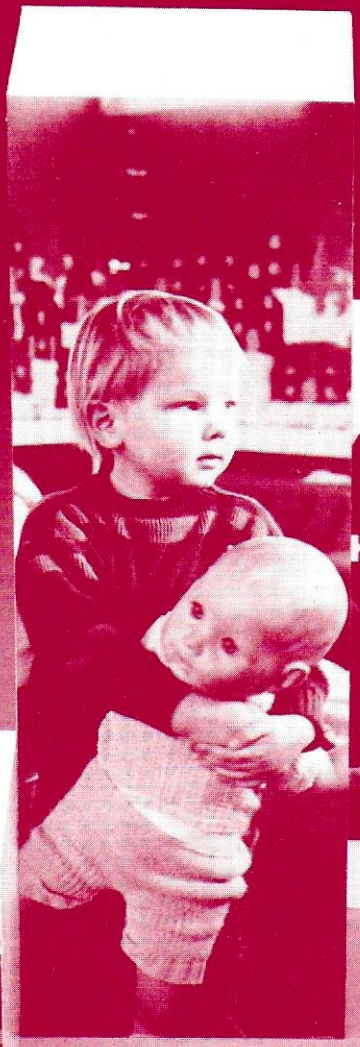


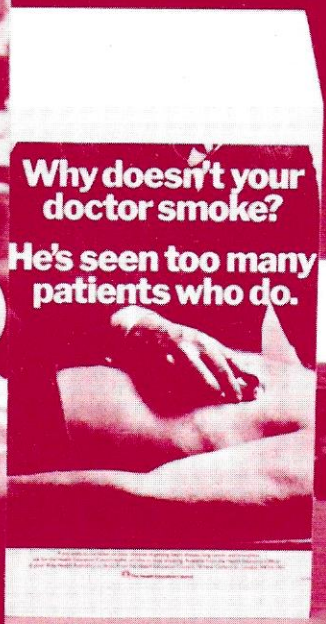
MDST 242 C2

The Open University
Mathematics/Social Sciences/Science/Technology
An inter-faculty second level course

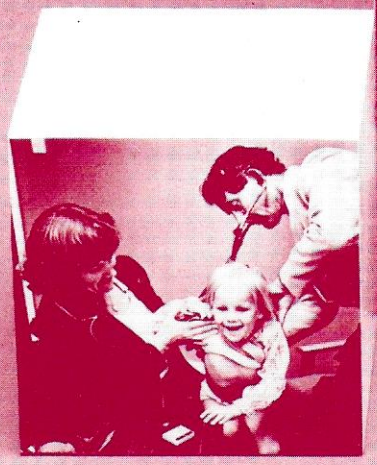
Unit C2 Scientific experiments

STATISTICS in SOCIETY









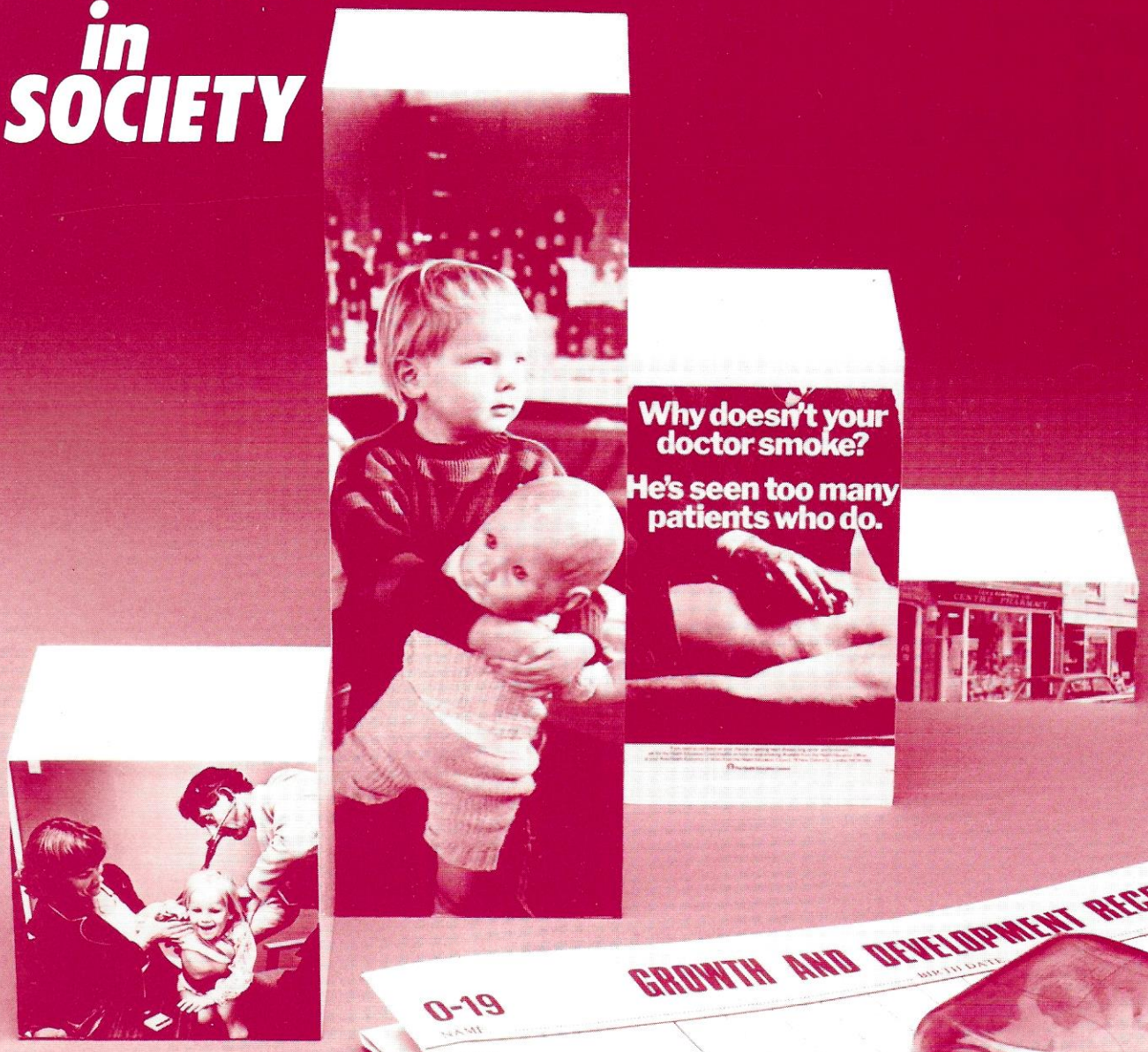


MDST 242 C3

The Open University
Mathematics/Social Sciences/Science/Technology
An inter-faculty second level course

Unit C3 Is my child normal?

STATISTICS in SOCIETY

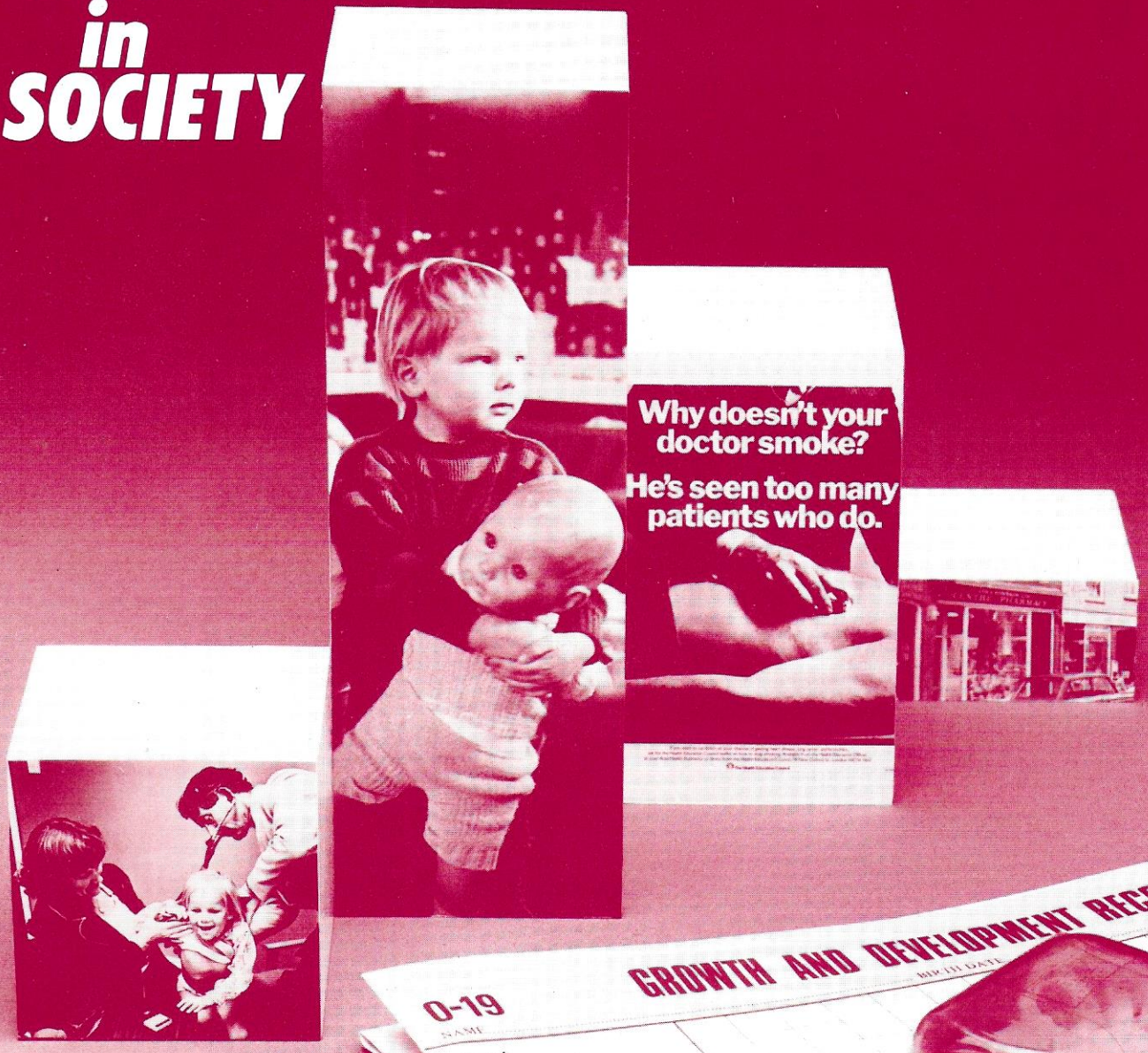


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Mathematics/Social Sciences/Science/Technology
An inter-faculty second level course

Unit C4 Smoking, statistics and society

STATISTICS in SOCIETY

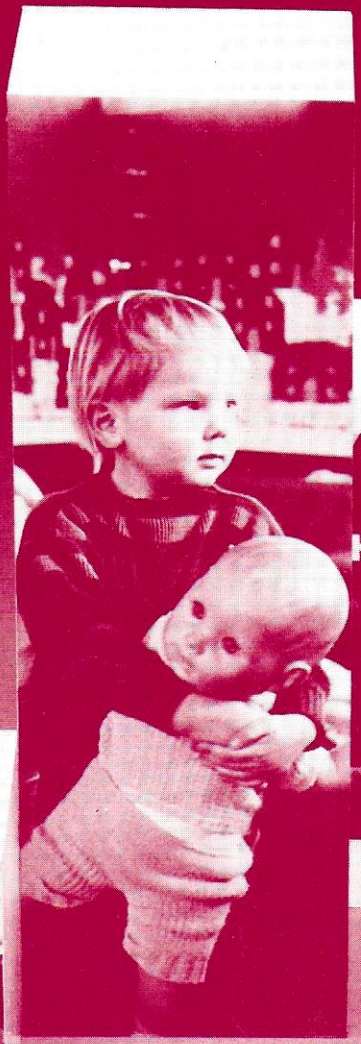


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An inter-faculty second level course

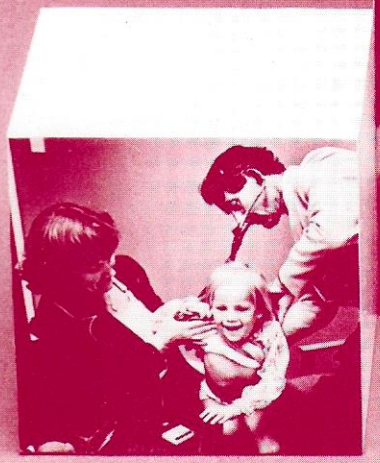
Unit C5 Review

STATISTICS in SOCIETY











MS221 CB A

The Open University

A second level interdisciplinary course

Exploring Mathematics

COMPUTER BOOK

A

BLOCK A

MATHEMATICAL EXPLORATION

Computer Book A

MS221 CB B

The Open University

A second level interdisciplinary course

Exploring Mathematics

BLOCK B

EXPLORING ITERATION

Computer Book B

COMPUTER BOOK

B

MS221 CB C

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Exploring Mathematics

BLOCK C

CALCULUS

Computer Book C

COMPUTER BOOK C

MS221 CB D

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Exploring Mathematics

COMPUTER BOOK D

BLOCK D

STRUCTURE IN MATHEMATICS

Computer Book D

MST121 Chapter A0

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A first level Interdisciplinary course

Using Mathematics

BLOCK A

MATHEMATICS AND MODELLING

Starting points

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Exploring Mathematics

BLOCK A

MATHEMATICAL EXPLORATION

Exploring sequences

CHAPTER A1

MS221 Chapter A2

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Exploring Mathematics

BLOCK A

MATHEMATICAL EXPLORATION

Conics

CHAPTER A2

MS221 Chapter A3

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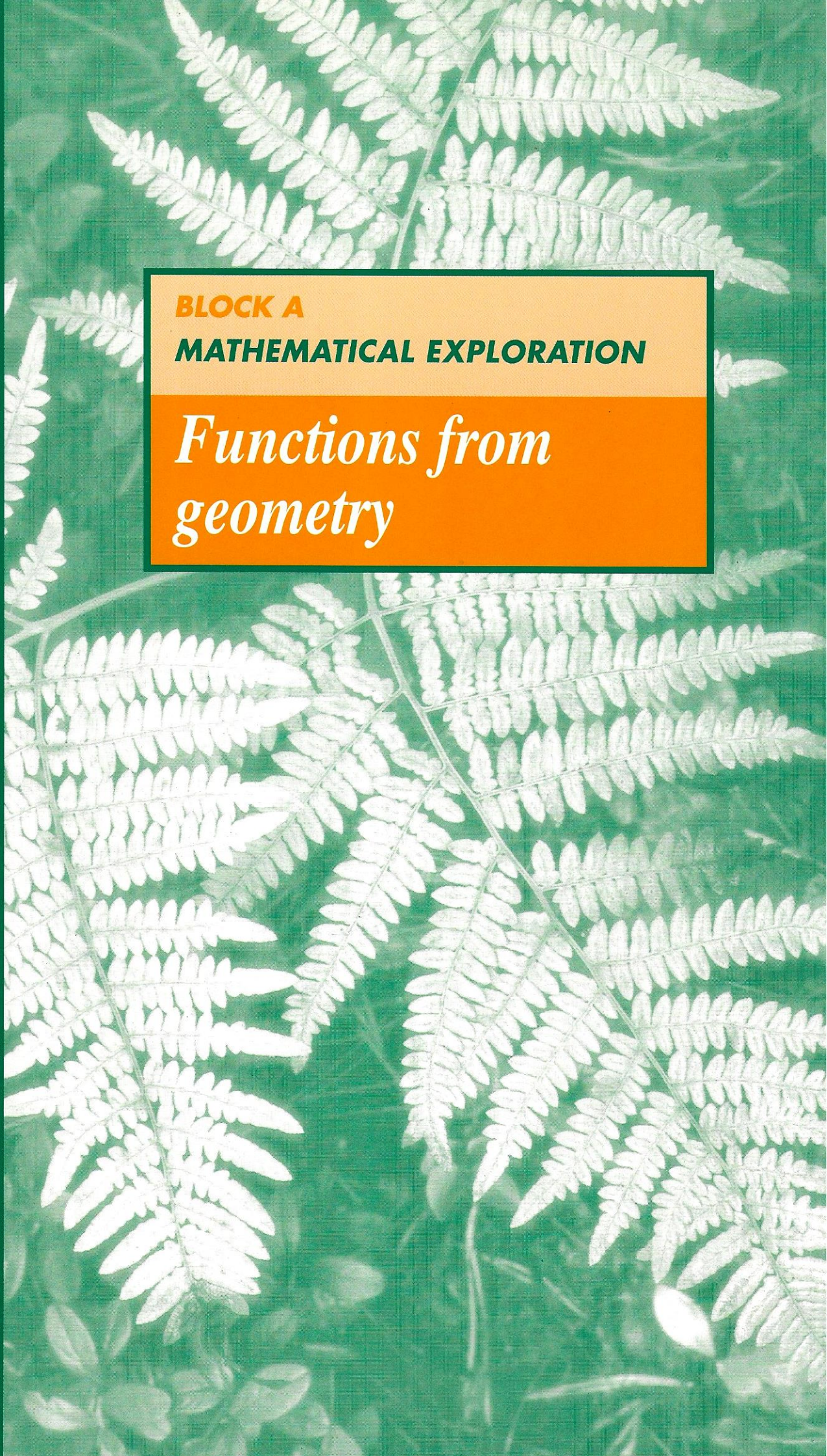
Exploring Mathematics

BLOCK A

MATHEMATICAL EXPLORATION

Functions from geometry

CHAPTER A3



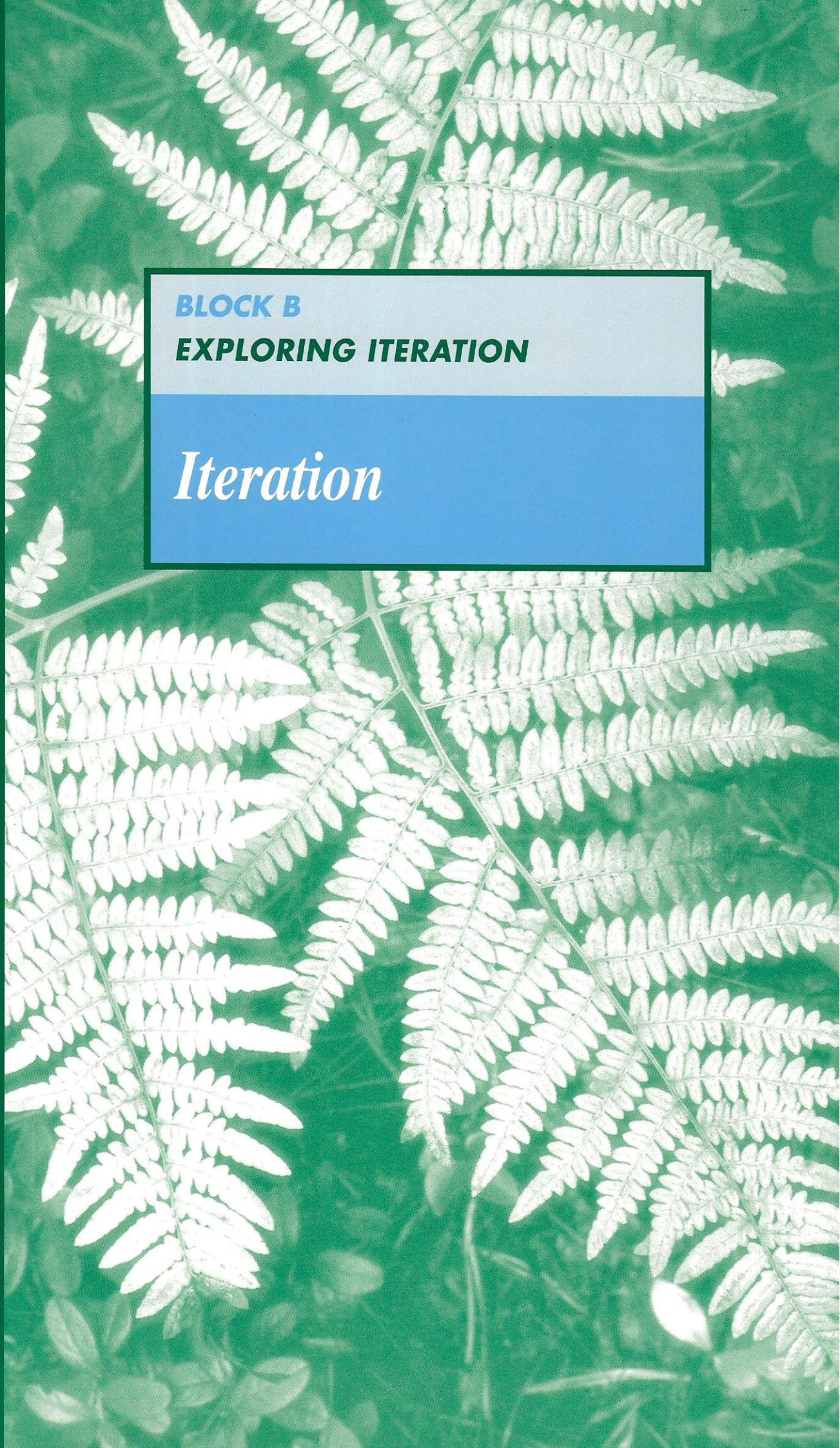
MS221 Chapter B1

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Exploring Mathematics

CHAPTER B1



BLOCK B

EXPLORING ITERATION

Iteration

MS221 Chapter B2

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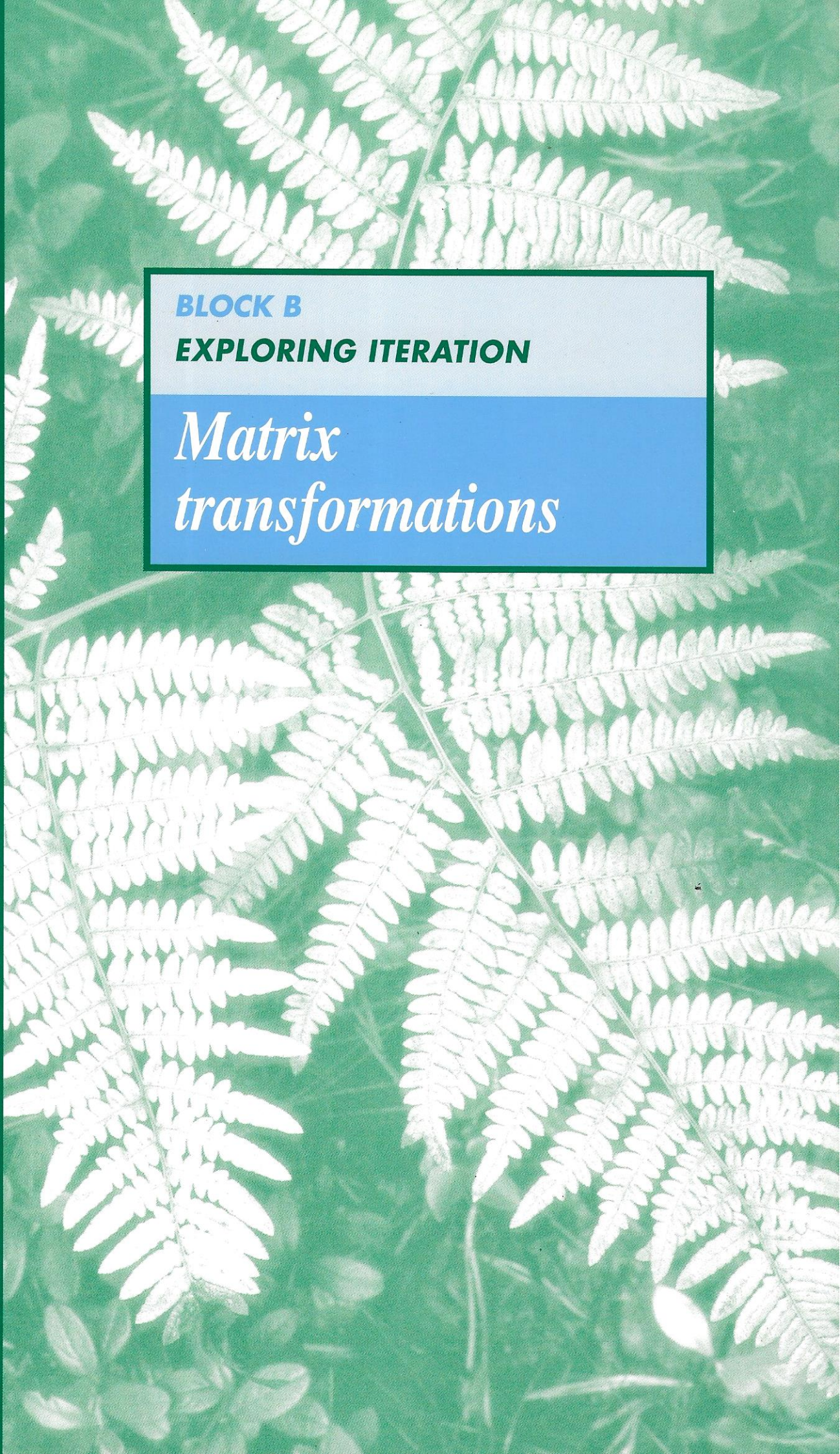
Exploring Mathematics

BLOCK B

EXPLORING ITERATION

Matrix transformations

CHAPTER B2



MS221 Chapter B3

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BLOCK B

EXPLORING ITERATION

Iteration with matrices

CHAPTER B3

MS221 Chapter C1

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Exploring Mathematics

BLOCK C

CALCULUS

Differentiation

CHAPTER C1

MS221 Chapter C2

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Exploring Mathematics

BLOCK C

CALCULUS

Integration

CHAPTER C2

MS221 Chapter C3

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BLOCK C

CALCULUS

Taylor polynomials

CHAPTER C3

MS221 Chapter D1

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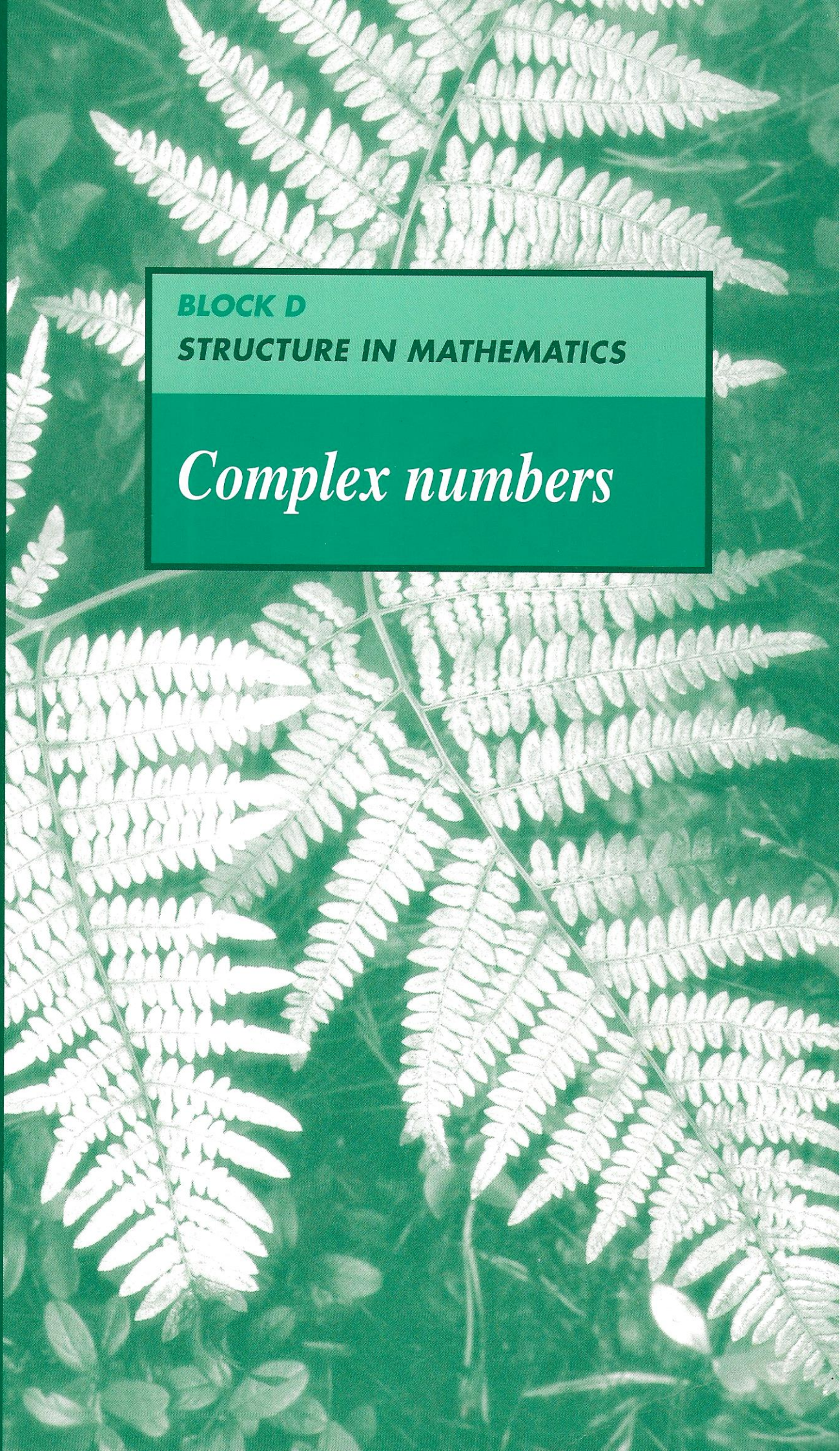
Exploring Mathematics

BLOCK D

STRUCTURE IN MATHEMATICS

Complex numbers

CHAPTER D1



MS221 Chapter D2

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Exploring Mathematics

BLOCK D

STRUCTURE IN MATHEMATICS

Number theory

CHAPTER D2

MS221 Chapter D3

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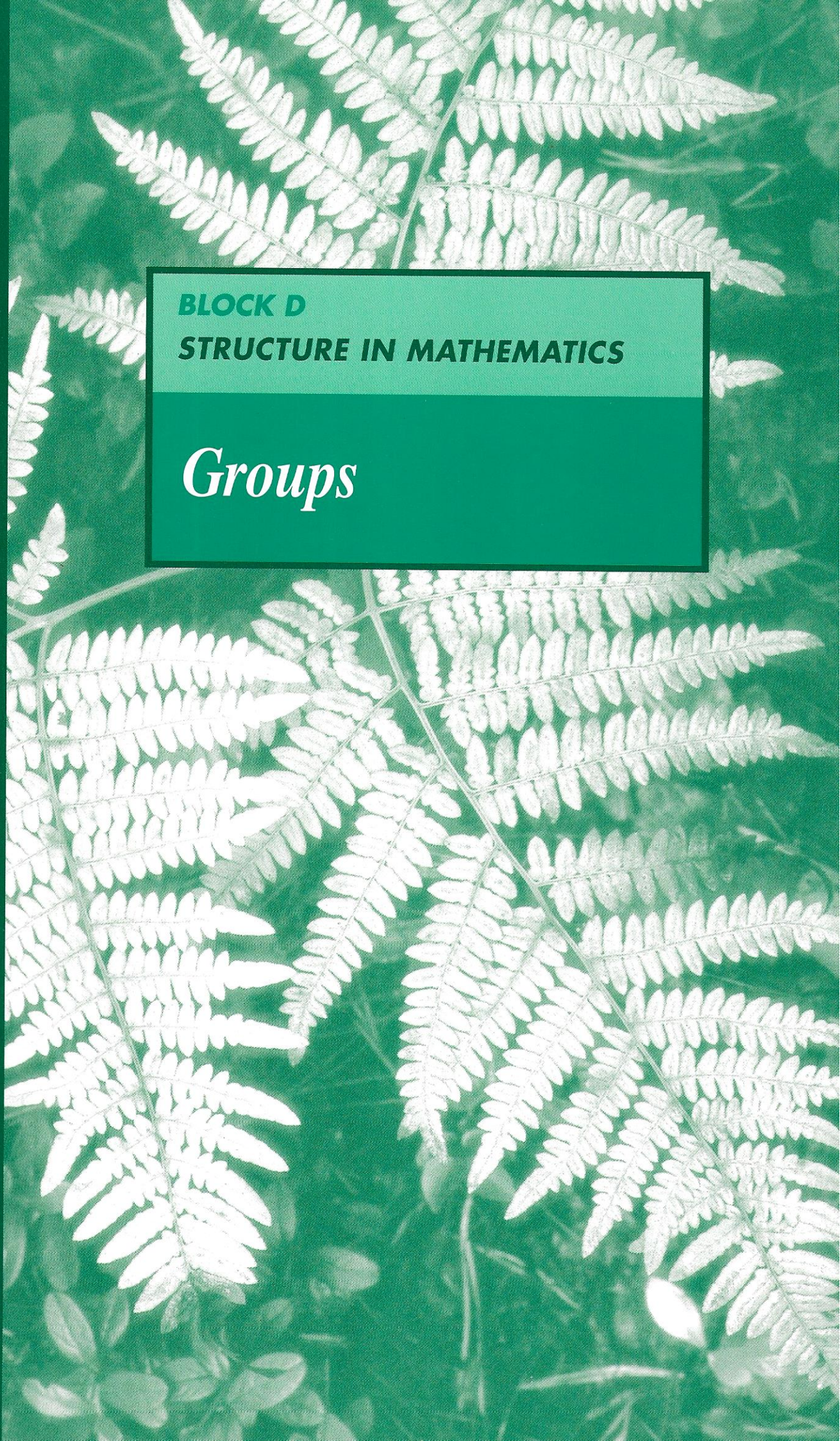
Exploring Mathematics

BLOCK D

STRUCTURE IN MATHEMATICS

Groups

CHAPTER D3



MST204 PB



The Open University

Mathematics/Science/Technology

An Inter-faculty Second Level Course

MST204 Mathematical Models and Methods

mathematical models and methods

Preparatory Booklet

MST 204.1



The Open University
Mathematics/Science/Technology
An Inter-faculty Second Level Course
MST204 Mathematical Models and Methods

mathematical models and methods

Unit 1
Recurrence relations

MST 204.2

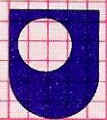


The Open University
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An Inter-faculty Second Level Course
MST204 Mathematical Models and Methods

mathematical models and methods

Unit 2
Differential equations I

MST 204.3



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Mathematics/Science/Technology
An Inter-faculty Second Level Course
MST204 Mathematical Models and Methods

mathematical models and methods

Unit 3
Animal populations: their growth and exploitation

MST204.4

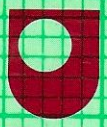


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Mathematics/Science/Technology
An Inter-faculty Second Level Course
MST204 Mathematical Models and Methods

mathematical models and methods

Unit 4
Newtonian mechanics in one dimension

MST 204.5

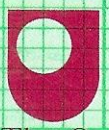


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Mathematics/Science/Technology
An Inter-faculty Second Level Course
MST204 Mathematical Models and Methods

mathematical models and methods

unit 5
Complex numbers

MST 204.6



The Open University
Mathematics/Science/Technology
An Inter-faculty Second Level Course
MST204 Mathematical Models and Methods

mathematical models and methods

Unit 6
Differential equations II

MST204.7



The Open University
Mathematics/Science/Technology
An Inter-faculty Second Level Course
MST204 Mathematical Models and Methods

mathematical models and methods

Unit 7
Oscillations and energy

MST204.8

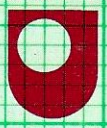


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Mathematics/Science/Technology
An Inter-faculty Second Level Course
MST204 Mathematical Models and Methods

mathematical models and methods

Unit 8
Damped and forced vibrations

MST 204.9



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Mathematics/Science/Technology
An Inter-faculty Second Level Course
MST204 Mathematical Models and Methods

mathematical models and methods

unit 9
Simultaneous linear algebraic equations

MST 204.10



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An Inter-faculty Second Level Course
MST204 Mathematical Models and Methods

mathematical models and methods

unit 10

Linear programming

MST 204.12



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An Inter-faculty Second Level Course
MST204 Mathematical Models and Methods.

mathematical models and methods

Unit 12

Heat transfer

MST 204.14



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MST204 Mathematical Models and Methods.

mathematical models and methods

Unit 14
Vector algebra

MST 204.15



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MST204 Mathematical Models and Methods

Unit 15
Newtonian mechanics in three dimensions

MST204.17



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Unit 17
The dynamics of many-particle systems

MST 204.18



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Unit 18

Polynomial approximations

MST 204:19



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Unit 19
Numerical methods for differential equations I

MST 204.20



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Unit 20
Matrix algebra and determinants

MST 204.21



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Unit 21

Eigenvalues and eigenvectors

MST 204:22



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Unit 22
Simultaneous differential equations

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unit 24
Normal modes

MST 204.25



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unit 25
Functions of more than one variable

MST 204.26



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Unit 26
Vector Calculus

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Unit 27 Multiple integrals

MST204.28



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Unit 28
Moments and circular motion

MST204 29



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Unit 29
Angular momentum and rigid bodies

MST204.30



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Unit 30
Planetary orbits

MST 204.31



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Unit 31
Fourier Analysis

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unit 32
Partial differential equations

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Unit 1 Modelling and linear models
Unit 2 Non-linear models



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Unit 3 Modelling position
Unit 4 Modelling motion



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Unit 5 Rates of change
Unit 6 Growth and decay



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Unit 7 Circular motion
Unit 8 Modelling with rates of change



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Unit 9 Adding things up
Unit 10 Using integration
Unit 11 Differential equations and integration



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Unit 12 Modelling with integration
Unit 13 Modelling with differential equations



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Unit 14 Growth, decay and oscillation 1
Unit 15 Growth, decay and oscillation 2



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Unit 16 Revision: modelling heat



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